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Dr. Ignatz Philipp Semmelweiss

THE pioneer in the realms of thought frequently finds himself in an uncomfortable or even dangerous position, particularly if he has a sensitive and irritable disposition. Under such circumstances, a wide field of interests and a sense of humor may save him.

Ignatz Philipp Semmelweiss was born in Buda, Hungary, July 1, 1818. He was educated in the universities of Pest and Vienna, where, even as an undergraduate in medicine, he attracted the attention of such men as Joseph Skoda and Carl Rokitansky.

In 1844 he was graduated from the University of Vienna as a Doctor of Medicine and was immediately appointed assistant professor in the maternity department, under Dr. Johann Klein.

At this time the mortality from puerperal fever, especially in teaching hospitals where patients were handled by the students, was appalling, running from 5 to 8, and even as high as 16 percent.

Semmelweiss noticed that the deathrate from this cause was higher in the wards where the students worked than it was in the midwives' clinic; that patients would die in rows, while others, under apparently the same circumstances, escaped; that women who were delivered before they entered the clinics did not contract "child-

bed fever"; and various other facts which convinced him that this condition was not due to fear, crowding, atmospheric conditions or any other mysterious influence, but to some local cause.

At last, a personal misfortune opened his eyes. His friend Kolletschka died from the effects of an infected finger which had been injured during an autopsy. Semmelweiss remembered that students came from the dead-house to the lying-in wards with only a superficial washing of the hands between. Perhaps there was some connection. He ordered his students to wash their hands with a solution of chlorinated lime before venturing to attend a woman in confinement—and in a few months the mortality from puerperal fever fell from 12.24 to 3.04 percent, and later to 1.27 percent—less than that of the midwives' clinic!

Some of the eminent physicians of his time were convinced by these results, but his chief, Klein, was a vain and jealous man and had most of the "authorities" on his side, so out the young investigator went!

From Vienna he was called to Pest, where his methods were again successful in reducing the deaths from sepsis to the surprisingly low figure of 0.85 percent.

But the world knew nothing of bacteria in those days, for the immortal work of

Pasteur was yet in the future; the announcement of the contagious nature of puerperal fever, by Dr. Oliver Wendell Holmes, in 1843, and before that by Charles White, Thomas Denman and others (though with less force and authority), had been entirely ignored in Europe; Semmelweiss was a sensitive, irritable, sour and tactless man and a slow and reluctant author.

Under such circumstances, the rebuffs and ridicule of his colleagues, which had been warded off from Dr. Holmes by his cheerful nature and wide versatility, fostered in the morose consciousness of Semmelweiss to such a degree that his mind became deranged and he was committed to an asylum for the insane in July, 1865.

By a curious irony of fate, he went to that institution with an infected finger, such as had killed Kolletschka, and died from septicemia within a month, a martyr, partly to the stupidity of his contemporaries and partly to his own misguided and unhappy disposition; but, none the less, one of the pathfinders of modern surgery and obstetrics.

The constant man loses not his virtue in misfortune. A torch may point towards the ground, but its flame will still point upwards.—Sanskrit Proverb.

FESTINA LENTE

We sometimes get the impression, as we read of the prodigious strides which are being made in scientific research and industrial and mechanical achievement, that humanity is rushing forward at a tremendous pace and that Medicine is rapidly approaching a place where there will be nothing left to learn.

Such an impression, however natural to the casual observer, is highly erroneous. The *surroundings* and *circumstances* of man have undergone revolutionary changes in the past half-century, but the *human race*—the men and women who are living in this new environment—continues to pursue its leisurely progress along the path of evolution, unhurried by telephones, electric lights and power, the radio, x-rays or even transatlantic flights. Persons scutter feverishly about a multitude of affairs, many of which are scarcely worth while, but the development of the human heart and mind and soul requires time and very much thought.

It helps us to get a due perspective upon

ourselves to read the works of Hippocrates. Many of the statements of the Father of Medicine might have been written last week, so full are they of the age-old and unchanging truths upon which medical practice is based, and which we are now rediscovering, with blare of trumpets, under the impression that they have never been stated before.

Scientific discovery has far outrun practical application. Inspiration may come to the imaginative genius in a flash; but the knowledge of how to use and evaluate the new discoveries is acquired only by the slow process of experience by trial and error, with hours of painstaking observation and other hours of deep and concentrated pondering upon the things observed.

Here is an example of the slowness with which large problems of medical and social economy are solved:

"It is known to your committee that numerous individuals, well-to-do in the world, are in the habit of resorting to the cliniques of the schools to obtain, gratuitously, advice for which they are fully able to pay. Thus a direct and positive injury is inflicted upon a large and deserving class of our brethren, whose means of livelihood and pecuniary receipts are proportionately curtailed."

No. You are wrong. This is not an extract from a committee report presented to the House of Delegates at the seventy-eighth annual A.M.A. meeting in Washington, last May. It is taken from a report read at the second annual meeting of the Association, in 1859. How much progress have we made toward the solution of this particular problem in sixty-eight years?

This is no invitation to our readers to take a pessimistic view of life. The race is progressing, regularly and perceptibly, and Medicine is progressing with it, but is progressing equally slowly because the *practice* of the healing art is in the hands of *human beings* and can never go faster nor farther than they go.

No cause for discouragement is here, but the recognition of these facts should help us to regulate our periods of undue excitement over various things and cause us to be less disturbed over trifling occurrences and salutary mistakes. It should broaden and deepen our sense of humor, which is the same as saying, make us better philosophers.

There is no royal road to wisdom or art or ability or any other of the really big things of life. We get only what we have

earned. Much thinking must precede action if the results of our activities are to show permanent and satisfying development.

We are wise if we hasten slowly, taking time as we go to observe and meditate upon all the charming and beautiful things which are going on in our own dooryard these autumn days, as well as on the strictly professional matters which necessarily engage most of our waking hours.

Remember, we, as individuals and as physicians, can advance little if any faster than human society advances, and that we can never really be better doctors than we are men.

I have heard the complaint made against the Boston Medical College that those who there receive their education want faith, and so are not so successful as practitioners from the country schools who believe in the power of medicine.—Emerson (1837).

MACFADDEN SEEKS MEDICAL INDORSEMENT

Bernar Macfadden and his magazine *Physical Culture* have long been thorns in the flesh of the medical profession; not because he can do us any financial harm, for thinking people do not follow him in his vagaries regarding the evils of serums and vaccines, but because we dislike to see ignorant or thoughtless persons misled in the name of health and vitality.

After his attacks on the medical profession it is rather a joke to find him seeking the indorsement of physicians, to be mailed to his magazine by the prospective indorsees, on prepaid postcards which seem to have been widely distributed.

If these cards are carefully considered their purpose is obvious, but there may be thoughtless ones, even in the medical profession, who "uphold the best traditions of modern medicine and physical culture"—when, and only when, those last two quoted words are taken in the ordinary sense, and certainly not when they are considered as the name of a lay magazine which has consistently endeavored to overthrow some of the soundest tenets of modern medical practice.

We hope that no readers of this journal have inadvertently "bitten on this bait," as an esteemed correspondent from Texas expresses it, but that, instead, they have done as this wise doctor did—used the card to tell the Macfaddenes what he thinks of their propaganda.

If every physician in the country would

consistently pursue this policy, in this and all similar cases, it might be helpful in subduing the clamor of some of the individuals who have more enthusiasm than sense.

Any who have signed these cards without due consideration of what they mean may still have time to cancel their indorsement and tell Macfadden their opinions regarding some of his ideas and methods.

The most deadly blow that the organized medical profession can give to every type of irregularity is to examine all patients so thoroughly and so carefully that they will recognize the difference between competency and the lack of ability and equipment to make an intelligent and complete examination.—Dr. W. D. Haggard.

THE NITRITES

The nitrites used in medicine fall into three groups: *Amyl nitrite*, having a sudden, violent and very transitory action; the *nitrates of sodium and potassium*, having a slowly-developing, mild and rather prolonged action; and *Nitroglycerin* (sometimes called glonoin or trinitrin), the effects of which are intermediate in rapidity and duration.

Physiologic Action.—The effects of all the nitrites are similar in their general qualities. They depress the nervous system, especially or almost exclusively the motor functions; relax the peripheral blood vessels, causing a fall of the blood pressure; depress the vagus center, causing an increase in the pulse rate; constrict the bloodvessels of the pulmonary system and cause a fall in body temperature. They increase the urinary flow by relaxing the renal vessels.

The effects of *amyl nitrite* are explosive, whether it is inhaled or swallowed, and the patient should be warned of these effects, so that he will not be frightened. It causes a feeling of bursting fullness in the head, roaring in the ears, staggering, a congested and cyanotic appearance of the face, with distended bloodvessels and, finally, complete loss of muscular power, so that the patient falls, with a racing pulse and gasping respiration. These effects pass quickly.

Nitroglycerin produces results similar in quality but much less violent and alarming and more prolonged.

The *nitrates of sodium and potassium* cause no dramatic symptoms, but their effects persist for hours or days.

Uses.—The nitrites are used in medicine, in general, to relax muscular spasms and

reduce blood pressure. None of them are heart stimulants and they are useful in cardiac cases only because they give relief and rest to hearts which are struggling with the burden of increased arterial tension. In heart conditions where the blood pressure is normal or low they are useless.

Amyl nitrite and nitroglycerin are used chiefly to relax general or local muscle spasms, as in *angina pectoris*, *epilepsy*, *gastroalgia*, *asthma*, *laryngismus stridulus*, *whooping cough*, *infantile convulsions*, and in the muscular spasms of *tetanus* and *strychnine* poisoning; also in *cerebral anemia*.

Either of these drugs is especially useful in *hemoptysis*, as they constrict the pulmonary vessels, while relaxing all the others. Both have been recommended for the relief of distressing symptoms following the injection of cocaine with epinephrin.

In *spasmodic dysmenorrhea*, nitroglycerin is very useful, but it is dangerous in *puerperal eclampsia*, because the relaxation of the uterus predisposes to postpartum hemorrhage. It is said to be useful in *vomiting*, except that caused by pregnancy or peritonitis.

The choice between amyl nitrite and nitroglycerin depends upon the urgency of the symptoms and the remedy most quickly available. Either should be followed by sodium or potassium nitrite or by atropine, as indicated, to maintain the effects.

Erythrol tetranitrate is used in the same way as the nitrites, but is slower in action and is said, by some, to produce more lasting effects and to require no increase of dosage in protracted cases. The dose is $\frac{1}{2}$ to 1 grain.

Sodium and potassium nitrite are administered by mouth, over long periods, to relieve the symptoms of persistent *high blood pressure* and to reenforce the action of the more promptly acting members of the group.

Administration.—Amyl nitrite is usually given by inhalation, in the form of pearls of thin glass, containing 5 to 10 minims of the drug. One of these is crushed in a handkerchief, releasing the fumes, which have a very pleasant odor. Three to 5 drops may be placed on a lump of sugar and given by mouth.

For prompt effects, nitroglycerin should be given hypodermically, in doses of 1/100 to 1/50 grain. The oral dose is 1 to 2 minims (0.05 to 0.1 cc.) of the 1-percent

alcoholic solution (*Spiritus Glycerylis Nitratis*, U.S.P.), in a little water, or 1/100 to 1/50 grain, in tablets or granules, repeated as required. The system rapidly becomes accustomed to this drug, so that, if it is used for some time, the dose must be progressively increased, up to 60 minims (4.0 cc.) or more.

The nitrites of sodium and potassium are best given in capsules, with sodium bicarbonate, in doses of 1 to 5 grains (0.6 to 0.325 Gm.), several times a day.

There is no spirit which is not enveloped in matter: There is no matter which is not ensouled by spirit.—Annie Besant.

WHISKEY PRESCRIPTIONS

There appears to be such complete and widespread misunderstanding, among physicians and by even medical journalists, of the fundamental principles involved in the Government's restrictions on the prescribing of alcoholics that it seems worth while to make another attempt to state these principles as simply and definitely as possible, in the interest of clear thinking.

Either alcohol is a valuable drug in therapeutics or it isn't. The opinions of wise and well-informed men differ on this point but there are only the two sides to the question.

If it is not a medicine physicians have no more interest in it than have other people and should not be permitted to prescribe it at all. Had Congress possessed the intestinal fortitude to take this position, their judgment and the validity of their information might have been questioned by many people, but not their sincerity of purpose. And physicians might have accused them of lack of sense but would have had no cause to fear their motives.

If, on the other hand, alcohol is a useful medicine (which Congress tacitly admits it to be), then no one has any right to tell any physician the doses in which he shall prescribe it, any more than any one has a right to dictate the doses of other medicines which he uses. If the Federal Government assumes the right to direct medical practice in one line, there is no logical reason why they should not seize the privilege in other lines. This may never, in practice, develop into a serious menace to the profession, but it contains the seeds of grave danger.

Nobody questions that the annual allowance of whiskey prescriptions is more than

sufficient to meet the needs of any physician. It is improbable that the average doctor sees more than a very few patients in a year whose life and comfort depend upon large doses of alcohol. If he could distribute his annual allowance to the needs of his practice all would be well.

What the honest and straight-thinking physicians of this Country resent is the obvious straddling and political jugglery on the part of Congress, by which the profession was given a privilege—with a string to it—with the implied idea that the privilege would be widely abused and that alcohol is, after all, nothing but an illegal beverage.

People, as a rule, behave about as they are expected to behave—and doctors are people. They were treated, by the Government, like naughty school-boys; and some of them are conducting themselves on that basis.

Let us, for any sake, think straight and clearly! Alcoholism is a *nervous disease* and not merely a defect of judgment or morals. It may be that the saloon contributed to the manifestations of this disease. There seems to be a wide variety of opinions on that point. We shall not discuss it here because we are making no comments, pro or con, upon the eighteenth amendment or the Volstead law, except as their provisions affect physicians; nor do we feel that a medical journal is the proper place for such discussions, under the circumstances.

One of our editorial confreres has classed the bootleggers among those who are working for the repeal of the Volstead law. This is ridiculous, and worse—it is muddy thinking. If this law were taken off the books the bootlegger's business would fall flat; therefore he is as earnest in its support as is the Antisaloon League. Politics, indeed, makes strange bedfellows!

From the standpoint of the physician there are only two logical and reasonable things for Congress to do: Either remove all restrictions as to the prescribing of alcohol; or prohibit it altogether. Either action would clear the air and would be satisfactory, on the basis of fundamental justice.

But such action seems too much to expect. In the former case the politicians would fear the Antisaloon League, which thinks little or not at all but acts strenuously. In the latter event they would fear their

henchmen at home, who would be wroth at not being able to get a pint, on occasion, from some venal doctor—why, even the Congressmen themselves might be forced to go pintless in some emergency!

Let us, as physicians, no matter what we may believe about national prohibition in general, keep our heads above the politico-religious fog which surrounds the whole subject and, so far as our profession is concerned, insist that its status shall not be determined by the acts of its least worthy members nor its judgment hampered by unwarrantable Government restrictions.

Never explain—your friends do not need it and your enemies will not believe you anyhow—Elbert Hubbard.

ENDOCRINE DOSAGE

Accurate diagnosis is a necessary preliminary to successful treatment, in any case, and in endocrine disorders it is especially essential to know just what is the matter before attempting to remedy the trouble.

After the diagnosis is made and the treatment decided upon it must be given in such a way as to produce results, and this is impossible unless one knows what dosage one is giving and keeps a record of it and of the results obtained.

Epinephrin (which, by the way, is not at all the same as adrenal substance), and thyroxin are definite chemical substances and these, as well as pituitary extract (pituitrin) are fully standardized. Epinephrin and pituitary extract are not, as a rule, prescribed for endocrine dysfunctions. The other glandular preparations—adrenal substance, ovarian substance, etc.—are usually prescribed on the basis of the desiccated glands and the doses recommended are generally understood to be on that basis, except that thyroid substance is standardized on the basis of its iodine content, according to U.S.P. specifications.

Some manufacturers of these products state the dosage on the basis of fresh glands, which is confusing to most physicians who do not understand how much weight these organs are supposed to lose in the process of drying.

Insufficient doses of endocrine preparations appear to be useless. Overdoses may easily prove dangerous in certain cases, if given carelessly or used for self-medication by laymen. Successful endocrine therapy

requires care, judgment, liberal dosage, frequently for long periods, and close observation under the best of circumstances, and if the physician is confused by various standards it seems small wonder if he loses faith and interest in the method.

Glandular therapy, while it has made great strides in the past few years, is by no means fully organized and standardized. That will, no doubt, come in the process of time.

Meantime, there is one safe and satisfactory way to standardize one's own individual technic in endocrine medication. Buy preparations from an established and reputable firm, or specify its products on prescriptions; keep careful records of the dosage given and the results obtained; if results are unsatisfactory, try another firm's goods until you find some that *work*. When you have done this, stick to that brand and you will soon learn just what is to be expected from certain doses of the various products.

Give reliable endocrine preparations, made from raw material of the highest grade and carefully controlled; give the right ones; give enough and give it long enough; give the brand you know—so shall your results be pleasing to all concerned.

Accuracy in thought is essential, but it should be attained not by hurry or fuss but by perfect calmness.—C. W. Leadbeater.

PENALTIES OF UNPREPAREDNESS'

Much of the American history which is fed to our children in the schools is, to say the least, decidedly inaccurate. The authors of most of the textbooks used, inspired by the commendable desire to present our Country and its heroes in a favorable light, have either glossed over or perverted facts which appeared to them discreditable, or have drawn wholly unwarranted conclusions from the facts.

Among the mistaken ideas conveyed to the pupils in our schools, few have greater possibilities of serious danger than has the general impression that, whenever the United States has engaged in armed conflict, we have been promptly and decisively victorious, due to the superhuman intelligence and foresight of our officers and the unprecedented valor of our men.

As a matter of fact, our victories—if such they can justly be called—have been bought at an incredible cost in lives and treasure, because our citizens have con-

stantly belittled the importance of an army and have wholly failed to grasp the vital necessity for military preparedness.

In the Revolutionary War, the chief circumstance which brought a decision in our favor was the fact that many British statesmen were in sympathy with the Colonies, and the general impression was that their retention as part of the Empire was not worth the necessary effort. Our military operations were pathetically unsuccessful; our soldiers were frequently without clothing, pay or food; and it took nearly 400,000 recruits to defeat 40,000 of the prepared and trained enemy. But, in spite of all these hard lessons, the Army, after the War, was reduced to 80 men and a few officers.

Trouble with the French and Indians had raised the Army to a total of 2,500 officers and men by the time the War of 1812 came on. That was rather an *opere bouffe* struggle, on the whole. Because we were not ready for it, it took 500,000 recruits over two years to fight 5,000 British Regulars, at a cost of \$50,000,000 and 5,000 American lives. On one occasion, 1,500 British troops defeated 5,000 half-trained American militiamen and took and burned the city of Washington.

The war with the Seminoles and Creeks was fought largely with untrained militia, and 40 percent of the officers and men of the Regular Army were killed.

In spite of the urgent recommendations of General Winfield Scott, we entered the Mexican War with a Regular Army of only 8,000 men and muddled through it with terrible and wholly unnecessary losses of lives and money. And then, again, the Army was reduced to a pitiful handful, most of whom were guarding our frontiers against the Indians. No preparations were made for the Civil War, whose coming could easily be foreseen by any who had vision.

The result of this almost criminal lack of adequate preparedness was months of chaos and disaster and thousands of unnecessary deaths. Supplies of all sorts were lacking and there was no trained and responsible head to the Army until General Grant was given supreme command.

The beginning of the Spanish War saw a Regular Army of less than 25,000 effectives, and the old story of muddle-headed inefficiency, lack of supplies and floundering attempts to do something effective with

regiments of untrained and undisciplined volunteers was repeated. The thousands of graves which hold the men who died because they did not know how to take care of themselves testify to the complete unreliability of such methods.

The story of the awful waste of men and money during the World War, the direct result of congressional stupidity and the Pollyannafied apathy of our citizenry, is too fresh and is known to too many to require more than passing mention.

Then, at last, for the first time in the history of the United States, a coordinated military policy was promulgated, including a reasonably adequate Regular Army, with provisions for organization and training of the Organized Reserve and the National Guard.

And what is Congress doing to the National Defense Act? Our authorized Regular Army of 250,000 men is cut to less than half that number, because necessary appropriations are refused; Reserve and National Guard training are curtailed for lack of funds; this past summer, thousands of young men applied for the Citizens Military Training Camps but could not be given this vitally necessary instruction because of Congressional "Economy"—and all to enable our noble lawmakers to fatten up the "pork barrel" and mend their political fences!

Ours is a peaceful nation and always has been so. The man who knows most about war is the most ardent advocate of peace. Military preparedness, far from breeding war, is its best and surest preventative.

Let us learn and face the truth about our history and let us teach it to our children, so that, if we seriously and thoughtfully elect to leave our Country stripped of adequate protection, we shall not try to hide behind the cloak of ignorance but will manfully face the facts that, should another conflict be forced upon us—which God forbid!—the young men who meet death in our defense will have been slain by our blind smugness and mental sloth, even more than by the arms of the enemy.

We are all of us—or should be to some extent—politicians, but we are first American citizens.—Dawes.

The feudal age vanished at the first whiff of gunpowder.—Dr. Edwin E. Slosson.

Worry is canned trouble—knowlege the can-opener.—Dr. W. L. Howard.

BASIC SCIENCE LAWS

It is a pleasure to report that Nebraska and Minnesota have recently enacted Basic Science Laws such as that described on page 334 of the May issue of this journal. There are now five states where such laws are operative.

Briefly, these Basic Science Laws require that all who would practice the healing art, in any form, must appear before a board of nonmedical scientists and demonstrate their knowledge of the basic sciences—anatomy, physiology, chemistry, bacteriology, pathology, diagnosis and hygiene—before they are eligible to go before a professional board to determine their ability to treat the sick in their own particular way.

Of course, regular medical graduates have taken such examinations for many years and it will be no hardship to them, because they are well prepared. But it is a severe jolt to a good many of the irregulars and they are squealing. The cry of "favoritism" and "A.M.A. monopoly" is, of course, being raised, as was to be expected.

We are unable to see how a fairer arrangement than these Basic Science Laws could be devised—fair to the patients as well as to all earnest and sincere healers, of whatever persuasion. When pitiful wails arise it is fairly certain that they emanate from some plumber's helper or apprentice carpenter or barber who had hopes of writing "Dr." before his name, putting on a hard-boiled shirt and a white collar and collecting a competence from sick people for treatment based on a six-months correspondence course and a hundred-dollar diploma with seven or eight large red and gold seals on it.

Chiropractic laws have been defeated in Ohio and New York and passed in Rhode Island and Missouri. Such a law is pending in Illinois and the irregulars are uniting to support it. Why are the doctors not equally united in the opposition?

The law in Missouri is particularly disastrous in that there are no regular physicians on the board, and the chiropractors are chortling to think they have things all their own way in this benighted state.

Here is an interesting idea, culled from the *N. C. C. Progressive*, a four-page publication put out by the National College of Chiropractic. The entire back page of this sheet is an advertisement of one, E. M. Taylor, who urges that chiropractors in-

crease their business by appealing to the emotions of former patients in order to keep them boasting for their chiro and sending in more patients. This is to be accomplished by sending them a series of form letters, devised by Taylor—one letter each month—which is guaranteed to stir up those whose zeal for chiropractic is failing and to "pull like a ten-ton grappling hook."

Basic Science Laws should prove immensely helpful, especially to the confiding patients who entrust their bodies to the care of irregular practitioners, but there seems to be something here that goes even deeper than that. Is it some exhalation which we absorb from the atmosphere of a medical college?

We are by no means fanatics about the letter of the laws of formulated medical ethics. As a matter of fact, we feel that, in some respects, the present code is out of date and needs revision. But, with all our possible heresies along this line, there are some things which seem decidedly *infra dig*, if not positively indecent, and one of those is playing upon the gratitude and susceptibilities of our patients in an effort to "drum up trade." Why, even the open advocates of "direct appeal" (an euphemism for medical advertising in the newspapers) have never suggested and, we be-

lieve, have never even considered a scheme like this.

It seems probable that most medical schools have been remiss in giving their students no instruction whatever in regard to the economic aspects of their profession. That is a serious oversight and such defects in the curriculums should be promptly remedied. But between the squeamish professional punctiliousness which disdains to discuss financial matters at all and the attitude of frank or even blatant commercialism which appears to be taken by some of the irregular schools, we would be old-fashioned enough to choose the former—if we had to choose between two evils.

Here is one way in which every one of us can help forward the cause of sound and scientific medicine. We can urge upon our legislators the passage of Basic Science Acts, similar to those recently adopted by Minnesota and Nebraska, and we can keep in touch with what is going on in our State Capitols and express our opinions regarding the merits or demerits of any proposed laws relating to the practice of healing. This is not much to do, and if we fail to do it we ought to be good enough sports to keep our mouths shut when the irregulars "slip one over on us."

THE popular conception of a scientist as a man who works in a laboratory and who uses instruments of precision is as inaccurate as it is superficial, for a scientist is known, not by his technical processes, but by his intellectual processes; and the essence of the scientific method of thought is that it proceeds in an orderly manner toward the establishment of a truth.

—Dr. Francis W. Peabody.

Leading Articles

Birth Control As It Confronts the Medical Profession in the United States

By S. ADOLPHUS KNOPF, M.D., (Univ. N. Y. and Paris), New York

I HAVE lately been the recipient of quite a number of letters relative to the birth control problem, some expressing most favorable comments, others criticisms on religious grounds, and some asking for specific information on the best and safest contraceptive methods. Whether or not this was a result of the kind and flattering reviews of my booklet on the subject in many medical and lay periodicals—a particularly gratifying one having appeared in CLINICAL MEDICINE AND SURGERY—and the unusually interesting summary of Norman Haire's article on "Marriage and Ill Health" in the same number (June, 1927, Vol. 34, p. 480), or because of my article on "The Prevention of Tuberculosis in Infancy and Childhood," in the *Journal of the American Medical Association* of April 2, 1927, in which I advised against child-bearing by women actively ill with tuberculosis, I do not know, but it certainly shows a growing interest in this important movement.

For the kind comments I am grateful. As for the criticisms on religious grounds, I do not think a medical paper is the place to discuss them. Those who desire to know the views of great religious and ethical teachers who are in favor of wise, judicious and ethical birth limitation, I beg leave to refer to my essay entitled, "Medical, Social, Economic, Moral and Religious Aspects of Birth Control." In this booklet, which was so kindly received, there will be found an enumeration of the pathologic conditions in women which, besides tuberculosis, are most likely to become aggravated through pregnancy and which not infrequently lead to a fatal termination. The opinions of great medical authorities on the purely medical aspect, and of eminent writers on the economics of birth limitation are also given.

I would like here to correct a little error made by the reviewer in CLINICAL MEDICINE AND SURGERY concerning the price and office

of publication and sale of the booklet. The price of the paper bound copy is 25c, and that of the cloth bound copy 50c. The little book is obtainable at that rate at the office of the American Birth Control League, 104 Fifth Avenue, New York City. Whatever benefit accrues from its sale goes to the treasury of the Birth Control League for propaganda work and the maintenance of birth control clinics.

The reviewer in CLINICAL MEDICINE AND SURGERY kindly says: "We sincerely recommend this little book to all physicians. Its price is so insignificant that one can afford to distribute a few copies among influential people who are open-minded and have judgment. Such distribution may help to hasten the day when doctors can legally do what their consciences now tell them is right." Since no financial gain comes to me from the sale of the booklet, I can frankly say that I hope this suggestion will be followed by many of the earnest physicians and surgeons who are so frequently confronted with this important problem. However, to hasten the coming of a careful deliberation of the subject in our medical societies, I will deem it a privilege to send on request a complimentary copy of the booklet to the president or secretary of any County or State Medical Society, Academy of Medicine or Medical Club for the purpose of bringing up the subject of birth control for discussion before these societies.

In regard to the inquiries about the safest and most harmless contraceptives, I deeply regret to state that I cannot answer them without violating some federal and numerous state laws, which make the sending of any such information by mail a criminal offense. Section 211, of the Federal Criminal Code, the parent of all the United States obscenity laws, declares unavailable any information or means for preventing conception. The prohibition is well nigh limitless in scope, for it forbids any in-

formation, whether given directly or indirectly, and even includes any description calculated to induce or incite a person to use or apply any means for the prevention of conception. The maximum penalty for infringement of this Federal statute is five years in jail, or \$5,000 fine, or both.

Even the medical instructions for birth control are restricted by law in some states. According to the researches by Dr. H. M. Dilla¹, formerly of Smith College, the present legal status of birth control in the various states is as follows:

State Laws

"Twenty-four states (and Porto Rico) specifically penalize contraceptive knowledge in their obscenity laws.

"Twenty-four states (and the District of Columbia, Alaska and Hawaii) have obscenity laws, under which, because of the Federal precedent, contraceptive knowledge may be suppressed as obscene, although it is not specifically mentioned. Obscenity has never been defined in law. This produces a mass of conflicting, inconsistent judicial decision, which would be humorous if it were not such a mortifying revelation of the limitations and perversions of the human mind.

"Twenty-three states make it a crime to publish or advertise contraceptive information. They are as follows: Arizona, California, Colorado, Idaho, Indiana, Iowa, Kansas, Maine, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, Washington, Wyoming; also Porto Rico.

"Twenty-two states include in their prohibition drugs and instruments for the prevention of conception. They are as follows: Arizona, California, Colorado, Connecticut, Idaho, Indiana, Iowa, Kansas, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Washington, Wyoming and Porto Rico.

"Eleven states make it a crime to have in one's possession any instruction for contraception. These are: Colorado, Indiana, Iowa, Minnesota, Mississippi, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Wyoming.

"Fourteen states make it a crime to tell anyone where or how contraceptive knowledge may be acquired. These are: Colo-

rado, Indiana, Iowa, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nevada, New Jersey, New York, Pennsylvania, Washington, Wyoming.

"Six states prohibit the offer to assist in any method whatever which would lead to knowledge by which contraception might be accomplished. These are Arizona, California, Idaho, Montana, Nevada, Oklahoma, and Porto Rico.

"Eight states prohibit depositing in the Post Office any contraceptive information. These are: Colorado, Indiana, Iowa, Minnesota, New York, North Dakota, Ohio, Wyoming.

"One state, Colorado, prohibits the bringing into the State of any contraceptive knowledge.

"Four states have laws authorizing the search for and seizure of contraceptive instructions, and these are: Colorado, Idaho, Iowa, Oklahoma. In all these states but Idaho, the laws authorize the destruction of the things seized.

"Certain exemptions from the penalties of these laws are made by the states for:

Medical Colleges—Colorado, Indiana, Missouri, Nebraska, Ohio, Pennsylvania, Wyoming.

Medical Books—Colorado, Indiana, Kansas, Missouri, Nebraska, Ohio, Pennsylvania, Wyoming.

Physicians—Colorado, Indiana, Nevada, New York, Ohio, Wyoming.

Druggists—Colorado, Indiana, Ohio, Wyoming.

"Seventeen states prohibit any information which corrupts morals, 11 of them, as starred in the following list, particularly mentioning the morals of the young. This is an interesting point of view of the frequently offered objection to freedom of access to contraceptive knowledge, that it will demoralize the young. These states are: Colorado, Delaware*, Florida, Iowa*, Maine*, Massachusetts*, Michigan*, Rhode Island, South Carolina, South Dakota, Tennessee, Texas*, Vermont*, Virginia*, West Virginia*, Wisconsin*, and Hawaii.

"Two states have no obscenity statutes, but police power in these states can suppress contraceptive knowledge as an 'obscenity' or 'public nuisance' by virtue of the Federal precedent. These states are: North Carolina and New Mexico."

This unfortunate situation which makes the instruction of physicians by means of books or journal articles or the mail, and

even teaching in most colleges, virtually impossible, deserves only one comment; namely, that it is time that physicians assert their right and duty to practice medicine according to the best of their knowledge and the highest ethical conception, and that our legislatures cease prescribing and proscribing in matters which concern the medical profession alone.

Birth Control Clinics

The New York State Department of Health issued a circular recently in which it is stated that frequent, closely repeated pregnancies predispose to tuberculosis ("giving the tuberculosis germs a chance to grow"). It thus virtually advises the poor mother, already overburdened with numerous children, to avoid additional pregnancies. But where is she to go when unable to pay for expert advice? Of course, she thinks of the dispensary. But the State Board of Charities, which alone has the power to grant licenses to establish clinics and dispensaries, refuses to grant other licenses for the establishment of birth control clinics.

In his admirable report, which appeared in the *Med. Journal and Record* at about the same time, Dr. Dickinson² gives a full explanation of the reasons for this official result. He comes to the conclusion that in this instance "scientific investigation hangs on ecclesiastical action." The result is that, in New York City, there exists only one birth control clinic with a research department (46 West 15th Street); but, thanks to the untiring activity of Dr. Dickinson and his co-workers in the Committee of Maternal Health, there now exist at least a few medical centers where poor women entitled to contraceptive information are given instructions how to prevent future pregnancies. These are at Lenox Hill Hospital, New York Infirmary for Women and Children; New York Nursery and Child's Hospital; Sloane Hospital; Woman's Hospital; Lebanon Hospital (Bronx); Jewish Hospital; and Mt. Sinai Hospital. No birth control clinics or clinical centers seem to exist anywhere in the great State of New York outside of those named in New York City. In reality there is only one typical birth control clinic where ethical birth control is practiced and taught. I refer to the one located at 46 W. 15th Street. A similar clinic which was established by the American Birth Control League in the Borough of Brooklyn, had to

be closed for want of means. It is most unfortunate that the above mentioned medical centers which do contraceptive work are not called birth control clinics, as they would thus become known to the hundreds and perhaps thousands of unfortunate women who need contraceptive information. I am fully aware that there exists, even among medical men, a prejudice against the word birth control, which I find difficult to explain.

Chicago has six Birth Control Clinics: No. 1, 307 N. Michigan Avenue; No. 2, 1347 North Lincoln Street; No. 3, Henry Booth House, 701 West 14th Street; No. 4, South Side Community House, 3201 Wabash Avenue; No. 5, Jewish People's Institute, 1258 West Taylor Street; No. 6, Mary Crane Center, Hull House, 818 Gilpin Place.

The only other State where physicians can receive practical instructions and where women ill and in need of contraceptive advice, can be helped, is California, with three clinics: The Mother's Clinic, 130 S. Broadway, Los Angeles; Berkeley Health Center, 930 University Ave., Berkeley; Mothers' Guidance Clinic at Pasadena Dispensary; and the Prenatal Clinic, Pasadena.

It goes without saying that such clinics and maternity centers must have, and all of them do have, the equally important function of helping women, apparently sterile but curable, to have their desire for motherhood gratified. Thus the clinics and medical centers will also aid in the birth release of the physically, mentally and socially desirable and not merely in the prevention of conception in women physically and mentally unfit for motherhood. By a careful control of conception untold numbers of wives and mothers may be saved from an untimely death, not only from tuberculosis but also from other diseases which are aggravated by frequent, closely repeated pregnancies. As a result of a wise, judicious, ethical and scientific birth control, we may look forward to having a physically better and healthier and a spiritually higher type of humanity.

If our sanitary authorities throughout the country, who have already accomplished so much in preventive medicine, would also have those laws abrogated, which hinder the regular physician in the use of his prerogative in birth prevention and contraceptive methods, they would greatly aid the promotion of health and the prolonga-

tion of life. In large centers of population, especially, there should be a sufficient number of birth control clinics or maternity centers where the poor woman can receive expert advice.

These institutions might be productive of even greater good if a department were added where prospective husbands and wives could receive free physical examination to determine their fitness to enter wedlock and be instructed in the responsibilities and duties of parenthood. Such institutions are particularly desirable where examination prior to obtaining a marriage license is not obligatory. Departments of this type, connected with maternity centers and birth control clinics, are of sufficient importance and value even to deserve State or municipal financial assistance to carry on their work.

Birth Prevention in Tuberculosis

Concerning birth prevention in tuberculosis, of which, by reason of a rather long experience, I am perhaps better qualified to speak than of its relation to other diseases, we are confronted by the following situation: Women come to us not as yet tuberculous but worn out by "frequent, closely repeated pregnancies"; cases in which contraceptive advice is certainly indicated. Next comes the group already tuberculous, incipient or moderately advanced, but slightly active who, however, according to recent researches, particularly those of Opie and McPhedran¹ of the Phipps Institute, may transmit the disease to their children. That the tuberculous condition in such women not infrequently becomes aggravated by pregnancy is, of course, well known. Sanatorium treatment for months before and months after confinement, will alone give mother and child a reasonable chance of survival. Lastly, there are those unfortunate cases where prevention is no longer possible; and, in some instances, it becomes advisable to interrupt the pregnancy in order to save the life of the mother.

Although therapeutic abortion is now taught in most medical schools, I have found that many family physicians who were well versed in internal medicine and general medico-legal requirements, were at a loss what to do in cases of tuberculosis. I referred to this in a previous article² but will give a few more details here. When, as is not infrequently the case, the tuberculous condition becomes seriously aggravated

in the pregnant woman, a consultation with an internist and an obstetrician should be sought on the advisability of interrupting the pregnancy. If intervention is decided upon, the greatest possible sanitary and surgical care should be bestowed upon the patient. In many communities therapeutic abortions must now be reported to the health department; but, even where this is not obligatory, I advise the family physician, for his own protection, to report to the local health officer that, upon consultation with Doctors So and So, a therapeutic abortion is decided upon in the case of Mrs., and that the operation will be performed on such and such a day. It is also best to obtain a written consent from the husband.

Contraception Versus Abortion

No accurate statistics of abortions are available. The report of a Special Committee on Criminal Abortions quoted in the Textbook of Legal Medicine and Toxicology (Peterson and Haines, Vol. II) states that "One third of all pregnancies throughout the country end in abortions."

Of the dire consequences of abortions it is hardly necessary to speak in an article intended for medical men. Women, who for physical, economic, moral, social and other reasons, feel that they ought not to bring forth another child, are often desperate in the means they take to attain the desired end. Any number of harmful and ineffective devices are advertised and sold in this country under fictitious names, and advertisements giving some indications where women may apply to be aborted do also appear or become widely known without being advertised in papers.

Concerning the physical and moral harm open and insidious advertisements of this kind may do, and the tendency they have to bring knowledge of the wrong sort into the hands of the wrong people, with the further unfortunate result of actually increasing the prevalence of child murder and the practice of abortion, Studdard Kennedy, in an article in the July *Forum*, justly says: "Women who have put their trust in ineffective methods and have found them failures are, in their desperation, driven to odious expedients. Futile and harmful devices are the cheapest and amongst ignorant people the most widely known, and so this tragic and terrible practice is commonest among the poor. It is impossible to resist the conclusion that for

this state of things the highly moral ostriches must share the blame with the moral or immoral cynics. There needs to be an opening of the windows and a clearing of the air on the whole subject. The power of controlling conception has come to stay, and its coming is fraught with tremendous possibilities for good or evil to the human race. A new responsibility is laid upon men and women, and they must see to it that they bear it rightly."

It is the woman, after all, who has to bear the burden of childbearing and she should have a voice in making the laws concerning such vital questions as bringing forth the right kind of children and in such numbers as she knows she and her husband can take care of. It would seem that in England the Women's National Liberal Federation has taken up the matter in earnest and at its recent conference adopted a resolution, moved by Lady Howarth and seconded by Mrs. N. Barclay, that information should be available to those who ask for it at the centers controlled by the ministry of health, where the physicians were in possession of the medical history of the mothers and knew to whom such information should be given, "By this means enabling the poorest members of the community to obtain information to which the wealthier classes already have access."

It must be frankly admitted that an abortion, even in most skillful hands, is not free from danger, particularly in cases of pulmonary tuberculosis. How much better would be the prevention of conception in women actively ill with disease! Nevertheless, abortion is taught in our medical schools, while the teaching of contraceptive methods is tabooed in nearly all undergraduate and even in postgraduate schools.

By a thorough study and observation of the results of what we know already to be a comparatively sure and safe contraceptive method, the occasional failures and the sometimes more or less serious physical and psychic complications might be reduced to a minimum. Facilities for the regular physician to obtain accurate contraceptive information and to learn by experience what best to do when confronted with the problem of avoiding the aggravation of diseases and saving the woman's life for her other children and her husband, are extremely limited. To the best of my knowledge, only Johns Hopkins and Columbia Universities give courses in contraceptive methods.

Nevertheless there is much need of careful instruction in this matter, whether the young physician devotes himself to general practice or to a particular specialty, and there is also much to be learned by the elder ones.

Our recently acquired knowledge of the function of the ductless glands offers another demonstration of the injurious effects of excessive childbearing, particularly in women below par or actually diseased.

That great Master of Endocrinology, Professor Charles E. de M. Sajous, called the attention of the profession to this as early as in 1903. In a recent letter to me he states that these conclusions have been confirmed by many investigators since that time, and goes on to say that he would consider the injurious action upon the ductless glands as the fundamental evil effect of excessive reproduction by those unable to take care of their offspring, for these glands sustain life and defend it. I quote the following from his letter:

"The fact that the number of deaths is over twice greater among the children of large families than it is in small families (four children or less) indicates that, besides weakening the vital fabric of the mother, excessive reproduction debilitates that of the child and its defensive power against disease. Hence the predilection of children of large families to disease, particularly those of the poor, through deficiency of food, crowding in small quarters, uncleanliness, etc. When we add to this the inevitable neglect and lack of moral training, the reason why large families are prolific sources of youthful criminals, prostitutes, narcotic addicts, etc., becomes clear. All these misfortunes would be mitigated and even prevented to a marked degree if birth control, or rather conception control, were studied and practiced with due care. In Holland and other countries where this form of prevention has, with government sanction, been practiced under the guidance of family physicians, excellent results have been obtained."

The repeal of our antiquated laws will not only help the medical profession in doing its best for the patients, but will also be helpful in solving the problem of overpopulation and aid in the general improvement of the physical, social, economic and moral condition of the masses.

In conclusion I will quote once more from Kennedy's splendid article: "The power to control the incoming stream of life is the most momentous and revolutionary of all the powers that modern research has put into the hands of men and women and

therefore carries with it the gravest responsibility. Hitherto the power has been blindly and badly used, and there has been no wide-spread moral teaching about it,—largely because the moralists have condemned the use of the power as evil in itself."

Recommendations

The resolutions unanimously adopted by the Sixth International Neo-Malthusian and Birth Control Conference, held under the presidency of Mrs. Margaret Sanger, in New York City in 1925, still cover the present status of birth control and point toward the solution of the problems connected with it. These resolutions:

First, deplore "The dysgenic character of the present dissemination of knowledge, whereby information is restricted to those capable of producing the very children most desirable to the community";

Second, urge "the need of instruction among the extremely poor and ignorant";

Third, deplore "the handicap of the doctors all over our country in being denied access to printed technical information and, in certain states, being denied freedom to impart it";

Fourth, emphasize "the dangers of over-population, and the desirability of a League of Nations inquiry";

Fifth, recommend the study of "the effect of birth control on child welfare, and the part in preventive medicine which regulation of birth should take";

Sixth, urge "the call for scientific investigation, and the study of the effect of birth control on divorce;"

And, as a final recommendation, urge "that persons whose progeny gives promise of being of decided value to the community should be encouraged to bear as large families as they feasibly can."

I hope that this survey of the present medical and legal status of birth control may give rise to serious thought and consideration of the necessity of having the subject of judicious, scientific and ethical contraceptive methods studied and taught in our medical schools.

I furthermore hope that our legislators may soon see the light regarding those absurd and antiquated laws which make the population no better either physically, morally, or socially. May they realize that

because contraceptives are not available, even for physicians who need to prescribe them [in many states, the medical man is not even allowed to advise their use], self-induced and criminal abortions kill thousands of women every year and cause permanent invalidism to an equally large number. The majority of women who resort to abortion are unfortunate mothers of already large families who fear not to be able to take care of more little ones.

It is time for our worthy lawmakers to realize that it is impossible to legislate morals in this matter, particularly when a large portion of the population feels that to strive for voluntary parenthood and only well-wanted children, who can be provided for and reared properly, is neither immoral nor irreligious. Education, enlightenment, tolerance and one code of laws and ethics for man and woman will accomplish more than all the laws on sex morality on our statute books.

Concomitant with the repeal of those so-called obscenity laws, a Research Bureau should be created for the study of improvement of the human race, eugenics and euthenics, of course, including birth control. Such a bureau should be under the direction of the U. S. Public Health Service, until the time when the latter may at last become an independent Department, with its head seated in the President's cabinet.

There is at this time among American physicians an almost unanimous feeling of indignation concerning that section of the Volstead act which limits 100,000 duly licensed medical practitioners in their prerogative to prescribe alcoholic medication according to their own judgment based on years of study, practice and experience.

It is evident that valuable lives may be sacrificed because of this absurd law made by laymen without having consulted the medical authorities who are alone able to determine a purely therapeutic issue.

It is not also evident that many more lives of American women, often mothers of large families, are constantly sacrificed because of antiquated and equally unwise and even dangerous laws, making the prescribing of contraceptive methods for sick and frail mothers, with, already, too many underfed children, a criminal offense?

At the recent meeting of the A. M. A., the house of Delegates of the Medical Society of the State of New York presented

strong resolutions petitioning for the immediate repeal of that obnoxious section of the Volstead act.

Would it not be equally timely to present resolutions at the next meeting of the A.M.A. pointing toward the repeal of that Section of the "Federal Obscenity Law" which prevents physicians from giving contraceptive advice in the interest of life and health?

With the abolition of the federal anticontraceptive law, the State laws would lose their force and physicians could be instructed in the knowledge that would enable them to be of the greatest service to mankind. They could save the lives of thou-

sands of mothers and wives when additional pregnancies would decree ill health, suffering and often death, and could prevent the, alas, so prevalently practiced criminal abortions with their disastrous results.

References

- 1.—Dennett, Mary Ware: Birth Control Laws. Published by Frederick H. Hitchcock. New York.
- 2.—Dickinson Robert L: The Birth Control Movement. *M. J. & Record*, 125:653, 1927.
- 3.—Opie, E. L. & McPhedran, F. M.: Spread of Tuberculosis Among Families. *J.A.M.A.* 87:1549. Nov. 6, 1926.
- 4.—Knopf, S. A.: Essentials in Prevention of Tuberculosis in Infancy and Childhood. *J.A.M.A.* 88:1058. April 2, 1927.

16 West Ninety-fifth Street.

Medical Mal-Practice

(First Paper)

By CZAR JOHNSON, M.D., F.A.C.S., Lincoln, Nebr.

ASUIT for damages for alleged mal-practice is a spectre which the doctor has never been able to accept with equanimity.

Notwithstanding that great scientific progress has been made in the field of preventive medicine, I have been unable to find any organized educational program for the prevention of alleged mal-practice. The well established doctrine that testifying against a brother physician is a fraternal and ethical misdemeanor, and weekly abstracts of court decisions bearing upon the subject of mal-practice published by medical journals are post mortem examinations rather than preventive medicine. In a majority of states medical defense committees assist in some capacity in the defense of mal-practice suits.

The creation of State Medical Defense Committees marked a radical departure from long established customs of the medical profession and added to scientific and purely professional activities, sociologic and economic problems. I assume that the purpose of the defense committees, as conceived and instituted by organized medicine, was mutual protection and assistance in the event of unavoidable misfortune from unwarranted prosecution for alleged negli-

gence or mal-practice instigated by malicious, ignorant or selfish individuals. I assume that experience had taught those who were instrumental in the foundation of medical defense committees that the public is frequently careless in its acts and speech, often indifferent to medical problems and that it, and also the medical profession, may harbor individuals who are malicious or avaricious. If my assumptions are correct, there is a legitimate reason for the existence of these committees. If there is a good reason for their existence there is an equally good reason for maximum efficiency without loss of the attributes of the profession.

In the past, so far as I have been able to learn, active defense of mal-practice suits has been the only function of these committees. I admit the necessity of efficient defense, but here, as elsewhere, an ounce of prevention is better than a pound of cure.

The causation of suits for mal-practice may be placed in one or more of the following classes:

- 1.—Malicious; either personal or professional, for personal, professional or financial gain.
- 2.—Circumstantial; wherein a combina-

tion of circumstances, misunderstanding or perversity of physical laws or the laws of health are contributing factors.

3.—Comparative; wherein both the physician and the patient contribute through carelessness, ignorance, indifference, misunderstanding or physical imbalance.

4.—Judgment; wherein the elements of the case are materially the result of the judgment used by the physician, who is not infallible.

5.—Inexcusable; where, because of incompetence, negligence, indifference or unwarranted treatment, disaster results.

The laws of all states governing mal-practice provide reasonable protection, and the courts have never required the impossible nor more care and attention than is the custom in the locality in which the physician practices.

Sometimes it is difficult to determine the prevailing custom. This lack of definiteness, when it exists, is an open invitation to mal-practice suits and a most serious condition in the face of legal difficulties.

This, I think, presents our present status and my own theory of the proprieties incident thereto.

Preventing Mal-practice Suits

I now invite your consideration of the feasibility of methods calculated, not to defeat actions instituted, but to *discourage* and *prevent* their institution.

1.—The unit of value is the doctor. Physicians, individually and collectively, should have a working knowledge of the legal phases and acts that are free from liability; acts that are liabilities; and those that are borderline liabilities.

2.—*Written records* of clinical history, physical and laboratory examination, treatment and charges should be the inflexible rule. This does not require a voluminous document. Precise, accurate notes take but little time and space and are extremely valuable. The practice develops accuracy and concentration, prevents neglect and omissions, acts as a barometer in the treatment, has an excellent psychologic effect, and is a sheet anchor in mal-practice suits.

3.—Consultations are a protection. They distribute responsibility, prevent mistakes and omissions, develop *esprit de corps* and prevent mal-practice suits.

4.—A reasonable, standardized obstetrical and surgical technic; treatment of fractures; use of electrical apparatus; intravenous and new and unofficial drugs; new and unofficial diagnostic reagents and the therapy of infectious diseases should be adopted in each locality. I appreciate that this will, to a limited degree, interfere with personal initiative; however, it will at the same time safeguard the public and the profession, which is more important.

A physician who is unwilling to accept guidance or conform to established conventions has no moral right to expect or receive collective assistance, and I doubt that the medical profession has the right to risk its reputation or spend money to defend such an individual.

5.—The medical profession has been unable to escape the problem of economics. Disproportionate and nonuniform fees for apparently the same relative value of work and excessive fees for incompetent work cause, in many instances, dissatisfaction and are frequently the primary cause of mal-practice suits.

6.—Demoralizing credit extension has become a serious problem. The practice of charging the rich an excessive fee on the pretext of being able thereby to render service to the poor is not charity and is too often the source of legal difficulties. It is a hybrid form of business. The terms rich and poor are relative and often vague. In actual practice the custom resolves itself into charging the individual who is thrifty and pays his obligations promptly an excess fee, in order to be able to render service for those who will pay the butcher, garage, gas station and movie theatre but who never acquire the moral or financial integrity to include the doctor. On the other hand, deserving charity should never be eliminated from the profession and can always be given without material loss.

There are many details in the prevention of mal-practice that could with profit be added to a prevention program. I have endeavored to show in a general way that this phase of medical practice is deserving of more study and attention than has been accorded it in the past. If I succeed in irritating a sufficient number of physicians to stir up a prevention program, I will have, in Army parlance, "accomplished my mission."

Federal Trust Bldg.

Protrusions from the Anus

By CHARLES J. DRUECK, M.D., F.A.C.S., Chicago

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TO the laity, any protrusion from the anus signifies "piles," but a careful investigation may prove the tumor to be other than a hemorrhoid.

Our first inquiry determines whether the extrusion is related to defecation, or is continually exposed, or can be produced at will; and if the tumor recedes within the anus, does it do so of itself or must it be replaced? and, if the latter, is the replacement difficult or painful?

We next inquire into the physical features of the protrusion—whether its surface is smooth or nodular and its substance hard or soft; and also whether it is sensitive or painful to manipulation.

Inspection of the protrusion notes any bleeding of its surface, or any ulcers or rugae and thus aids in determining if the mass be:

- 1.—A Thrombotic Hemorrhoid.
- 2.—A Cutaneous Hemorrhoid.
- 3.—A Varicose External Hemorrhoid.
- 4.—A Prolapsed Internal Hemorrhoid.
- 5.—The "Sentinel Pile" of an Anal Fissure.
- 6.—Prolapse of the Rectal Wall.

Thrombotic Hemorrhoids

An external thrombotic hemorrhoid (Fig. 1) has a classical history. The patient's story is something like this:

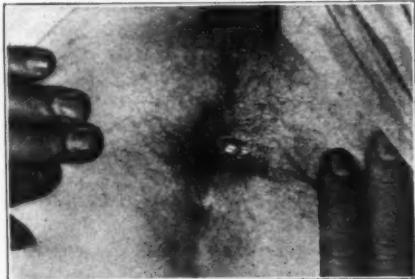


Fig. 1.—External Thrombotic Pile.

He was previously perfectly well, but during violent coughing, heavy lifting or while at stool, either straining or after wiping himself rather harshly, he felt a twinge or sting at the anus with a feeling as though something gave way, and since then he has suffered a sharp continuous

pain, as of a foreign body caught in the grasp of the external sphincter. He also suffers frequent spasmodic contractions of the sphincter.

Upon examination a swelling, varying in size from that of a pea to that of a cherry, is found situated at the anal margin, its inner border extending into the canal, and its outer margin extending beneath the skin covering the external sphincter.

This is a thrombotic hemorrhoid and to the touch it feels like a bullet under the skin or an enlarged lymphatic gland. It is usually single, but it may be multiple. This condition, found elsewhere on the skin, would be called a blood blister. It is an extravasation of blood from a ruptured vein into the soft folds of the skin about the anus. The blood poured into the tissue distends the skin into an oval-shaped tumor that is livid or bluish in color. The color of the tumor varies with the depth from the surface at which the clot is placed. If the blood is extravasated just under the superficial skin the tumor will be purplish blue; but if it lies deep, with considerable tissue over it there may be little change in the appearance of the skin other than a glistening surface, due to tension.

The thrombotic hemorrhoid develops suddenly. The ruptured vein becomes a sack containing the clotted blood. The pain is sharp and lancinating, although varying somewhat with the amount of distention and the presence of inflammation in the tissues. Defecation is exceedingly painful and is incomplete because of the spasm of the sphincter and the levator ani. Self-examination and attempts to force the tumor within the anal canal excite the sphincter and increase the suffering. This pain continues uninterruptedly until the tension of the skin is relieved or the clot is expelled.

The diagnosis is easily established by inspection of the parts. The small, sharply-circumscribed, bluish tumor at the anal margin is very characteristic. If two tumors exist, they are, as a rule, close together. Sometimes several clots may be found in a single tumor.

If left untreated, the thrombotic hemorrhoid follows one of two courses: (1) As

the blood clots and the serum gradually becomes absorbed, the tumor diminishes in size, the tension is relaxed and the pain and discomfort lessen. In a week or ten days the symptoms disappear, provided there is no inflammation or abscess development. As the serum of the clot and the edema of the surrounding tissues are absorbed the pile assumes a different appearance and is known as a cutaneous hemorrhoid. This condition will be described presently. (2) If not opened surgically, the thin wall over the clot may slough and the thrombus be extruded, unless infection occurs. (Fig. 2).



Fig. 2.—Thrombotic Hemorrhoid. The vein has ruptured and the clot is partly extruded.

If infection occurs in the thrombus of the pile the clinical course will be different. In a few days an abscess will develop and open spontaneously, if not incised by the surgeon. Sometimes very large abscesses result from this type of hemorrhoid. A little blood and pus will be discharged and instant relief be afforded. In very rare instances calcification of the clot has occurred and has been described as an anal concretion.

Cutaneous Hemorrhoids

Cutaneous hemorrhoids (Fig. 3), otherwise called skin tabs, connective tissue hemorrhoids or fleshy piles, are slightly thickened or sometimes much hypertrophied tabs of skin which, when quiescent, are distinguishable only as a redundancy of the anal folds, and appear to be a normal con-

dition in many people. Calling these tumors hemorrhoids in these individuals is a misnomer.

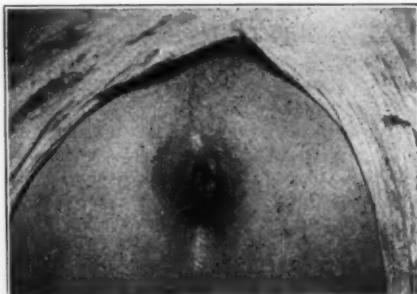


Fig. 3.—Inflamed Cutaneous Hemorrhoids.

Etiology.—Cutaneous hemorrhoids result from continued inflammatory processes in and about the anus.

(a) The most common antecedent is the thrombotic pile, since hyperplasia of the connective tissue remains after every such attack, unless the pile is removed surgically.

(b) Another frequent cause is the "sentinel pile" so often accompanying an irritable fissure. If this is left after the fissure is treated it will remain indefinitely.

(c) A third cause is the long continued irritation of the anal tissues occurring with chronic discharges from such conditions as internal hemorrhoids, proctitis, and anal and rectal ulcers, stricture and cancer. With all of these conditions the anus is kept moist and macerated and material collecting between the anal folds decomposes and becomes irritating. The presence of cutaneous hemorrhoids always indicates the existence, either present or past, of other and perhaps serious pathologic conditions within the rectum.

Owing to its peculiar situation, this type of hemorrhoid is liable to frequent trauma from being sat upon; and when inflamed comes to the attention of the rectal surgeon. It is also aggravated by improper diet, irregular habits and uncleanliness, and requires careful cleansing to prevent maceration, in which condition it emits an offensive discharge. When inflamed it appears as a hard, edematous, tender mass at the anal margin, varying in size from that of a pea to as large as the first joint of the thumb. It is external to the sphincter, and if pushed within the anus it promptly pro-

lapses. It is smooth and shining, covered with skin on the outside and perhaps mucous membranes on the inner side.

It is necessary to recognize this form of hemorrhoid as it is a connective tissue tumor and is not vascular. These tabs have been erroneously called condylomas. They may be single or multiple, and in some cases completely hide the anus. Very often a fissure is found at the base of one of the hemorrhoids which has been caused by the dragging and abrading of the tab. These tumors represent nothing but chronic irritation about the anus, and are found in many forms of rectal disease.

Symptoms.—Many individuals go through life with these skin tabs, without suffering, by being careful and cleanly in their habits. However, the tabs are prone to become inflamed, especially if neglected. They are a frequent source of pruritis and of mental annoyance to the patient, and in such instances had best be removed. When inflamed they may be so extremely painful as to incapacitate the patient. They may be so swollen and tender that the sufferer can neither sit, stand or move about, and is forced to remain in bed. Marginal abscesses and fistulas are occasionally seen, and the tumor remains larger after each inflammatory attack than it was before.

The diagnosis may easily be made by inspection. Patients do not seek relief except when the tumors are inflamed and painful, at which times they will be found firm and congested.

Varicose External Hemorrhoids

These are dilated peri-anal veins, forming the communications between the middle and inferior hemorrhoidal venous plexuses. This condition is due to difficulty in defecation, usually caused by hypertrophy and irritability of the sphincters, and is common in individuals who are constipated or who sit for long periods of time in one position. The constant straining and tenesmus causes turgescence of the veins until they become permanently relaxed. Like varicose veins of the legs they sometimes become very large and form a hemorrhoidal ring about the anus. These piles will disappear under pressure and may therefore be mistaken for internal hemorrhoids. They are not hemorrhoids in a strict sense but are varying degrees of fullness or swelling about the anus due to the unusually superficial location of the veins.

Symptoms.—These tumors begin insidiously and develop slowly. They never come on suddenly. There is no pain. The swelling is diffuse, not lobulated and easily outlined. The overlying skin is bluish. The only inconvenience is the swelling and a feeling of fullness at the anus. The patient's usual complaint is of an inability to relieve himself completely when defecating. There is considerable straining at stool and often several visits are made to the toilet before the feeling is relieved. He may even aid the expulsion by introducing a finger into the rectum. After each bowel movement there is soreness or uneasiness of the rectum and a sensation of fullness at the anus, together with a dull sacral ache.



Fig. 4.—Prolapsed Internal Hemorrhoids (direct view). Note the lobulations of the mass which differentiates it from prolapse of the rectum.

Examination.—The peri-anal skin will be observed to be loose and redundant and the anal orifice firmly closed. If the patient is asked to strain or bear down, the anus becomes prominent and is forced down to the level of, and sometimes beyond, the plane of the ischial tuberosities. The peri-anal skin becomes distended, creating a fullness all around the anal margin with the anal orifice forming the apex of the cone-like prominence. These varicose hemorrhoids often complicate or are associated with internal hemorrhoids, which should, in all instances, be sought for.

Prolapsed Internal Hemorrhoids

The venous hemorrhoid (Figs. 4 and 5) is the most frequent anal protrusion in adults, although fibroid polyp, complete prolapse of the rectum, papilloma and cancer may be found. The pile may appear as a good sized tumor, frequently one-half to

one inch across its base and covered with a livid, bluish and glistening mucous membrane. Matthews reports seeing one as large as a small orange. The hemorrhoid is situated in the submucous connective tissue, where it began in the venous pool, and the whole tumor is composed of the dilated and varicosed vein, with its capillaries, and also the corresponding arterial capillary supply.



Fig. 5.—Prolapsed internal hemorrhoids (lateral view).

The tumors, when multiple, are located usually one on each side and slightly in front of the posterior commissure (5 o'clock and 7 o'clock), and on the right and sometimes the left of the anterior commissure (11 o'clock and 1 o'clock). Sometimes the whole anal ring is a mass of varicosed veins, especially when the condition is due to disease of the heart, liver or kidney, and this varicosed condition may extend the whole length of the rectum and even to the colon.

Sometimes several small veins may be twisted together into one mass. The sacculations and varicosities are limited to the venous vessels and do not affect the arteries. The tumor is not wholly composed of veins but around this mass of vessels there is a fibrous capsule which sends trabeculae (partitions) in between the veins. As the tumor increases in size the mucous membrane covering the pile is chronically inflamed by the trauma of each passing stool and the walls of the veins are early thickened by the inflammatory hypertrophy. Sometimes such vessels may form large venous pockets.

The relative proportion of the vascular and connective tissue elements determines the firmness and other physical characteristics of the pile, and is an accurate means of determining the length of time the

tumor has existed. In long-standing hemorrhoids, the connective tissue preponderates over the vascular elements.

A venous hemorrhoid must have existed a long while before it will prolapse. Therefore a large tumor of recent development cannot be a venous hemorrhoid.

There is no increase in the arterial supply of the hemorrhoid. Usually one or two small arterial twigs are found, but the lumen of the vein may be very large.

The blood in one vein may coagulate and the clot be transformed into fibrous tissue. Such changes occur as a result of inflammation and infection.

The Relation of Proctitis to Hemorrhoids

Early in my work I noticed the association of hemorrhoids with proctitis. Acute catarrhal proctitis is often met with, and always you will find an edematous mucous membrane with its hemorrhoidal vessels engorged. As the proctitis subsides, the hemorrhoidal edema and engorgement are also reduced and finally disappear. If, however, the proctitis persists as a subacute or chronic form, the hemorrhoids also continue and a gradual hypertrophy of the mucous membrane results. This increases the bulk and weight of the mucosa, until it separates and slides down on the areolar tissue and is grasped in the sphincter. The spaces of the submucosa about the hemorrhoid are filled with connective tissue. Later, when the proctitis reaches the atrophic stage, the hemorrhoids remain, because of this connective tissue infiltration which permanently constricts the venous overflow.

Now there enters a second factor. The descending fecal mass, acting in the reverse direction on the veins, distorts the latter further and tears more mucosa from the muscular wall. With each bowel movement the hemorrhoidal mass acts as an obstruction as the feces are forced through. This increased muscular action drags down the hemorrhoid and the adjoining mucous membrane until they prolapse, thereby increasing the size of the hemorrhoid itself. Finally, when they have attained considerable size, they prolapse easily and act as foreign bodies tending to excite the sphincter to spasmodic contractions.

Clinical History of Prolapsing Hemorrhoids

Hemorrhoids sometimes exist for years without causing any symptoms whatever;

and again they may be troublesome from the beginning. The symptoms vary with different patients and also at different times in the same individual, depending upon accidents, complicating rectal conditions, and the changes which the hemorrhoids themselves undergo.

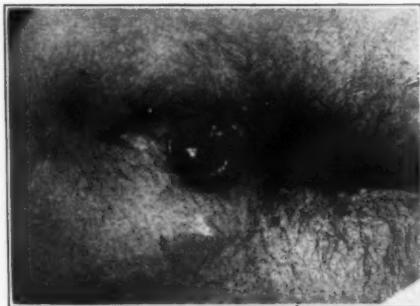


Fig. 6.—Prolapsed and Strangulated Internal Hemorrhoids.

In their early stages, internal piles are above the sphincters, but as they increase in size and each act of defecation drags upon them, their attachment is lengthened, until ultimately they protrude.

At first the hemorrhoids spontaneously recede after the expulsive action of the rectum ceases, but later they must be replaced by external pressure, and in doing so the sufferer is liable to induce the sphincteric spasm referred to above. If allowed to remain exposed, continued spasmodic contraction of the sphincters is excited and strangulation with swelling, inflammation, and intense pain intervene, and if not promptly reduced gangrene and sloughing of the tumor will follow. (Fig. 6).

Thus nature attempts to cure the trouble. Sometimes the slough or the surface beneath it becomes infected and an abscess forms, thus leading to a fistula as a sequel, or even pyemia with, perhaps, a fatal termination, may be the outcome.

If strangulation and sloughing does not occur, the sphincter gradually becomes tolerant of the tumor and partially relaxes, thus permitting the piles to be protruded when the individual coughs, sneezes, stoops or even stands or walks, and when they are so exposed they remain so. An acrid, irritating mucous discharge oozes from the anus, because of the associated chronic proctitis, and thus keeps the perineum moist and often excoriated, a con-

dition which forecasts a growth of warty excrescences.

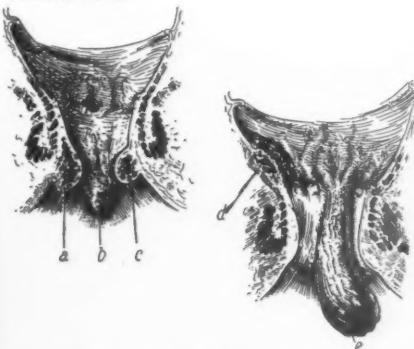


Fig. 7.—Diagrammatic sketch showing points of origin of the various types of hemorrhoids.
a.—Mixed Hemorrhoid.
b.—Skin tab.
c.—Thrombotic Hemorrhoid.
d.—Capillary Hemorrhoid also called strawberry pile because of the granular appearance of the superimposed mucosa.
e.—Prolapsing internal Hemorrhoid.

This condition occurs most frequently in the aged in whom the discharge is frequently profuse enough to saturate the under-garments. The anal sphincter frequently is very much relaxed, thus permitting an almost constant prolapse. Of course, inflammation and thrombosis, with suppuration, may occur, without there being strangulation. Ulceration or fistula occurs in nearly one-half of the cases of hemorrhoids. If the hemorrhoids remain prolapsed for any time the surrounding anal wall becomes inflamed and edematous, and this swelling further interferes with reducing the piles.



Fig. 8.—Anal Fissure. Note how sentinel pile obstructs drainage.

After the hemorrhoids have been reduced repeatedly for a long while relaxation of the sphincters occurs so that the tumors prolapse upon the slightest exer-

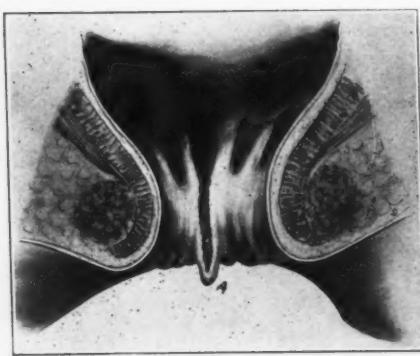


Fig. 9.—Diagram shows anal fissure beginning at a torn crypt of Morgagni and ending as a sentinel pile, A.

tion, not only at stool, but dancing, stooping or even walking, causes protrusion. These sufferers with "protruding piles" are forced to a life of semi-invalidism. A study

of the diagram (Fig. 7) may help to determine the type of hemorrhoid found in the case before us.

The Sentinel Pile of an Anal Fissure

Shortly after a tear occurs in the anal mucosa, infection converts the wound into an ulcer. At the lower end of the fissure the mucous membrane or mucocutaneous border is frequently hypertrophied, thus resembling a skin tab, and because it marks the lower end of the fissure it has been called the "Sentinel Pile" (Fig. 8). The fissure may at times extend through this inflamed and indurated tissue and divide it into two parts. The sentinel pile may at times be recognized as an inflamed tab of skin, as a torn crypt of Morgagni, or as an enlarged anal papilla (Fig. 9). This sentinel pile is excruciatingly painful to touch and if manipulated it brings on the characteristic pains of fissure.

Focal Infections Due to Paranasal Sinus Disease

By EDGAR E. POOS, M.D., Detroit, Mich.

SO much has been written concerning focal infections of the teeth and tonsils that all the medical profession and most of the laity are familiar with the results of infections of both of these structures, but so little has been read or written about the effect that sinus infections have on the general health, that I will take up some of the simpler points in the symptoms.

Anatomy of the Sinuses

The sinuses are cavities in the bones of the skull, of which there are three on each side; namely, the maxillary sinus or antrum of Highmore, the frontal, and the sphenoid; while the ethmoids are made up of multiple small cavities.

The antrum, the largest of the sinuses, lies in the cheek, mostly in the superior maxilla. Its capacity varies from 9 to 16 cc. Its veins drain, with the sphenopalatine, into the pterygoid veins, also those from the anterior surface go to the facial vein, while those of the roof go to the ophthalmic and then to the cavernous sinus. Mullin, of Colorado Springs, has shown that lymphatic absorption from the antrum, whether of bacteria or inert substances, is by way of the submaxillary and internal

jugular nodes to the thoracic duct, which then goes to the great veins of the right side of the heart and lungs. Substances reaching the lungs in the pulmonary circulation may of course pass on to the left side of the heart and the general circulation. Absorption from the teeth and tonsils takes a similar route.

The ethmoids are made up of the anterior and posterior groups of cells, which lie under cover of the middle and superior turbinates. Their capacity is 7½ to 10 cc. Their veins, the anterior and posterior ethmoidals, drain into the ophthalmic veins. Their lymphatics connect with those of the cranial cavity.

The frontal sinuses lie above the eye and the bridge of the nose. They vary greatly in size and one is often much larger than the other.

The frontal veins join the ethmoidal and sphenopalatine and also anastomose with the longitudinal sinus.

The lymphatics drain into the lymph nodes of the neck and also go to the subarachnoid space.

The sphenoid, the most posterior of the sinuses, lies within the sphenoid bone. Its

capacity is 5 to 6 cc. It is in intimate relationship to the optic nerve, hypophysis, medulla, basilar and internal carotid arteries and the cavernous sinus.

The epithelium lining the sinuses is of the ciliated variety, as found in the respiratory portion of the nose. The subepithelium contains blood vessels and glands, blended with the periosteum.

Functions of Sinuses

- 1.—The remains of rudimentary structures which, in the lower animals, serve as adjuncts to olfaction.

- 2.—To lighten the bones of the skull.

- 3.—To impart resonance to the voice.

- 4.—To secrete mucus and keep the nasal chambers moist.

- 5.—To moisten the inspired air, thus protecting the deeper respiratory structures.

Bacteriology and Pathology

The most common organisms found are the staphylococcus, influenza bacillus, micrococcus catarrhalis, pneumococci, bacillus coli, pseudo-diphtheria bacillus, pyocyaneus and the meningococcus.

Sinuses become infected by direct invasion from neighboring parts, through the blood and lymph channels, from traumatism, colds, foreign bodies and from other sinuses, also from infections of the tonsils or adenoids. About 25 percent of antrum infections are due to diseased teeth. Scarlet fever, influenza, measles, small-pox, tuberculosis and typhoid often cause sinus infections.

Round-cell infiltration occurs, with petechial hemorrhage, desquamation and thickened mucosa. The lining epithelium loses its cilia and becomes squamous in type. Glands are generally destroyed and the blood supply becomes less; later the bone becomes affected.

Symptoms

Headache due to:

- 1.—Swelling of mucosa with pressure or irritation of nerves.

- 2.—Direct contact of swollen mucosa.

- 3.—Negative pressure in sinus.

- 4.—Stasis following obstruction.

- 5.—Anything causing acute congestion of the skull.

- 6.—Disturbances in blood and lymph circulation at the base of the skull.

Differential Diagnosis

Maxillary sinus infections show pain over the frontal bone of the same side; at times over the antrum, but most commonly only

in chronic cases; also pain referred to the upper jaw, teeth, cheek, eye and supraorbital region.

Bogginess and congestion of lower eyelid indicate maxillary sinusitis. An ulcer on the septum opposite to the ostium of the antrum indicates antrum infection.

Frontal: Symptoms depend on the size and shape of the sinus. Patients are unable to think clearly or properly. Headaches will remit, sometimes, during the afternoon. Pain is distributed over the distribution of the first division of the fifth nerve. Pain occurs in and about the eye; marked pain on pressure over the floor of the sinus and behind the inner canthus. If the third cranial nerve is involved, with ptosis and congestion of the upper eyelid, the frontal and anterior ethmoid are involved.

Ethmoid infections are of two types: chronic hyperplastic, with polyp formation; and chronic suppurative.

Headaches are not severe; generally a dull pressure, most often over the parietal region, sometimes extending over the temporal. In the hyperplastic type, pain is more constant; in the suppurative type more severe. Patients also have pain between the eyes, directly above the root of the nose. Dilated pupil, especially if unilateral, and if myopia, glaucoma and other ocular diseases are ruled out, is due to infection of the posterior ethmoids.

Sphenoid: Diffuse feeling of pressure in the occiput, sometimes extending into the mastoid process and even into the temporal regions. Extension may be downward into the shoulder of the affected side—the so-called sphenopalatine syndrome. Pressure varies according to whether the sinus is full or partly full. During retention, pain is intensely sickening, and throbbing is synchronous with the heart beat; while during quiescence it assumes more the character of a heavy pressure on the vertex. Pain below the eye, in the region of the infraorbital nerve, is common. Dizziness on stooping is more often associated with pain in the sphenoid than in any other sinus. A feeling of splashing within the skull on quick movements of the head points to fluid in the sphenoid. This sign is rare. A prickling sensation at the roots of the hair is due to pansinusitis. Purulent secretion is found in the nose beneath the anterior third of the middle turbinate in diseases of the frontal, anterior ethmoid and maxillary sinuses; and above the posterior end

of the middle turbinate in posterior ethmoid and sphenoid infections. Cacosmia, or a peculiar smell noticed by the patient and anosmia, or lack of smell, are symptoms one sees frequently.

Complications are due to the relation of this sinus to the orbital cavity, optic nerve and brain.

Veins from frontal sinus anastomose with the longitudinal sinus. Veins from the ethmoid empty into the superior and sometimes the inferior ophthalmic veins and anastomose with veins of the dura. Veins from the sphenoid anastomose with the cavernous sinus.

Infections of the frontal sinuses and antrums drain into the chest through the lymph nodes and great vessels of the neck. They also enter the system by swallowing infected material carried into the throat by respiration; through defects in the bony walls; by absorption caused by obstruction to drainage, due to deviated septum, hypertrophies, etc., and by pressure resulting from mucocele, pyocele and hyperplastic ethmoiditis.

Associated Conditions

Eye: Hyperemia, infections of the lacrimal passages, conjunctivitis, blepharitis, phlyctenular keratitis, photophobia, lacrimation, ptosis, iritis, dilated pupil, asthenopia, intoxication affecting the nerves, uveitis, retinitis, orbital abscess, loss of accommodation, diminished visual fields, glaucoma, cataract, etc.

Nervous System: Various cranial nerves are affected as intoxication, pressure or paralysis. Neuritis of peripheral nerves, cerebral meningitis, extradural and cerebral abscess are not uncommon.

Cerebral Symptoms: Intense headache, fever, slow pulse, dizziness, vomiting, delirium and convulsions.

Ear: Tinnitus, eustachian catarrh, earache, vertigo, purulent otitis, etc.

Face: Neuralgias of fifth nerve, "face aches," cutaneous affections of the face, eczema of the nostrils, abscesses, etc., are very common.

Cardiovascular: Thrombosis, phlebitis, anemia, bradycardia and myocarditis occur.

Respiratory Tract: Frequent colds, ob-

struction to breathing, pharyngitis sicca, pharyngitis lateralis, hoarseness, swelling and edema of the arytenoid region, pain, irritation and tiring of the larynx, hayfever, asthma, bronchitis, bronchiectasis, pneumonia, etc., are frequent complications.

Gastrointestinal: Loss of appetite, perverted taste and smell, loss of weight, indigestion, hyperacidity, diarrhea, cholecystitis, gastritis, appendicitis and other infections of the gastrointestinal tract are by no means uncommon.

Genitourinary: Hyperacidity of the urine, nephritis, pyelitis, cystitis, albuminuria, etc., result, in many cases,

Endocrines: Many cases of hyperthyroidism can be traced to sinusitis, which also affects the pancreas, causing sugar in the urine; and the adrenals and sex glands, causing nervousness, melancholia, irritability and insomnia.

Bones and Muscles: Periostitis and osteomyelitis are very common; myalgias, rheumatism and arthritis often follow sinus infections.

Diagnosis and Treatment

Diagnosis is based upon the history of the case; a careful examination, including transillumination; and a full roentgen-ray study.

A tuning-fork held at the midline of the head is heard best on the side where sinuses are involved.

Treatment varies with the type and stage of the infection. In general it is necessary to establish drainage and secure ventilation. This may be done by means of irrigations and other local and general treatment of various kinds, but operative interference is frequently required.

Summary

1.—In practically every cold in the head there is more or less of a sinus infection.

2.—Many conditions of the head diagnosed as neuralgia are due to sinus infections.

3.—Sinus infections are often the source of the trouble in the various systemic conditions, relief being dependent on proper diagnosis and treatment.

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The Newer Aspects of Calcium Metabolism

A Review of Recent Literature

By W. A. BRENNAN, A.B., Chicago, Ill.

CALCIUM is probably the most important of the inorganic elements of the human body, furnishing about 2 percent of its total weight. In the bones and teeth it is associated with phosphorus in the form of phosphates; but, besides these it is found in other tissues and in the body fluids, especially the blood.

Calcium is also a known regulator of the excitability of nerve and muscle tissues. In tetany of various kinds, diminution of the calcium content of the blood serum is at the root of the muscular hyperexcitability which characterizes the disorder.

Whatever affects the metabolism of this element must be of the highest interest; apart from well-known skeletal defects such as rickets, osteomalacia, osteoporosis and derangement of growth due to faulty deposition of calcium, as well as sprue, variations in the blood serum calcium; i.e. hyper- or hypocalcemia, enjoin such conditions as tetany, with concomitant heart and kidney lesions which may lead to death.

In rickets and other skeletal disorders the blood calcium content does not appear to undergo any change of importance. Anderson¹ found that in forty normal children the calcium content of the blood varied from 6.4 to 9.5 mg. per 100 cc. In forty-five cases of rickets, of varying degrees of severity, the blood calcium varied from 6.0 to 9.9 mg. per. 100 cc. But in more than half the latter the blood phosphorus was lower than normal.

The metabolism of calcium seems to be intimately associated with that of phosphorus and, according to Briggs,² with that of no other substance.

In calcium metabolism we have, therefore, to consider two general conditions: first, the blood serum calcium content and its variations; and second, absorption and excretion of calcium and the deposition of absorbed calcium in the bones or elsewhere, apart from the blood.

There are several aspects from which the metabolism of calcium may be viewed; or rather there are several factors which are directly or indirectly concerned with it: The nature of the hormone regulating this metabolism; the effects of vitamins, especially the fat-soluble and the anti-

rachitic vitamins; the metabolism of phosphorus; the nature of the food intake; gastrointestinal conditions; and exposure to sunlight are known factors directly bearing on calcium metabolism.

Regarding the blood serum calcium, Mar-rack and Thacker³ showed that the calcium of the body fluids exists partly in the form of calciumions and partly in the form of un-ionized protein compound.

Salvesen and Linder⁴ showed experimentally that the blood calcium decrease in parathyroid tetany was not due to a primary decrease in the protein-bound calcium but to a decrease in the diffusible, ionized fraction.

With regard to the deposition of calcium (phosphates) on bones and cartilage, Shipley and Holt⁵ point out that other factors besides calcium and phosphorus may intervene. These authors' experiments, concerning which they have recently published a preliminary report, suggest that calcification may be inhibited or delayed by proteins or inorganic salt colloids in the blood stream.

The Parathyroid Hormone in Calcium Metabolism

The great advance in our knowledge of the factors concerned with calcium metabolism may be said to begin with the investigations of MacCallum and Voegtl⁶, published in 1909, which showed that removal of the parathyroid glands in dogs resulted in a state of prolonged hypocalcemia, with the syndrome of tetany and increased excretion of calcium in the urine and feces.

Greenwald⁷ found that after parathyroidectomy there were only two well-marked metabolic changes; i.e. lowered serum calcium content and diminished excretion of phosphorus. Ipponsugi⁸ observed that in parathyroidectomized animals the blood serum calcium content diminished for several days but regained its normal level about fifteen days after operation. The calcium content of the tissues, however, remained much below normal. These researches caused general acceptances of the fact that the parathyroid glandular secretion was intimately associated with the regulation of calcium absorption and metabolism, and inciden-

tally with the parallel metabolism of phosphorus.

The precise mechanism by which the regulatory action of the parathyroid secretion was effected was, however, not known; and the work of investigators in recent years has been directed to this and associated phenomena, resulting in much additional light being thrown on the problems.

MacCallum and Voegtlind established that in parathyroid tetany the blood had a lowered calcium content. Later investigations by Kramer and Tisdall¹ showed that practically all blood calcium was found in the serum, which normally contained from 9 to 10.5 mg. per 100 cc. of serum. A decrease to 7 mg. was conducive to tetany, and a content of 15 mg. could be considered as hypercalcemia.

The most important object of research then became the isolation of the parathyroid hormone regulating the calcium metabolism. Although Hanson² and others have prepared parathyroid extracts, the beef parathyroid extract prepared by Collip³, reported in 1925, is accepted as the most practical. Collip³ states that injection of this hormone causes, in both the normal and parathyroidectomized dog, a definite mobilization of calcium in the blood stream. Excessive amounts injected may double the average value of blood serum calcium; i.e., produce a profound hypercalcemia. Secondary changes include a great increase in inorganic phosphorus, in both the whole blood and serum; an increase in urea and nonprotein nitrogen; and invariably a great increase in viscosity. The calcium content of various tissues may be greatly increased (especially the heart and kidneys).

According to Collip, "The function of the hormone in the normal animal appears to be that of a regulator of the calcium metabolism and its action is primarily as a calcium mobilizer." Collip³ further states that his extract, when administered to parathyroidectomized animals, prevents tetany by restoring the level of the blood serum calcium to normal; also that elevation of the blood serum calcium could be produced in normal animals and that such hypercalcemia had been produced in man. The specific function of the parathyroid hormone appeared to be to keep the blood calcium at a constant level.

The increase in blood serum calcium may, however, be at the expense of tissular or

stored calcium. Hunter and Aub⁴ found that Collip's parathyroid extract, administered to patients, caused considerable excretion of calcium from the bones (more marked in the urine than in the feces), even on a diet very poor in calcium.

The literature of recent years contains a number of clinical reports in which infantile tetany, postpartum tetany and tetany following parathyroidectomy were either relieved or obviated by administration of parathyroidal hormone. The reports of Crile⁵, Lissner and Shepardson⁶, Collip and Leitch⁷ and Snell⁸ are of this kind. Crile's case was infantile tetany; that of Lissner and Shepardson tetania parathyreopriva; Collip and Leitch's, infantile tetany.

In some of these cases the use of calcium lactate was combined with the hormone.

Parathyroid hormone therapy for calcium deficiency conditions should, however, be practiced with a large degree of caution. Collip³ gives the effects of excessive use of parathyroid hormone as a great increase in inorganic phosphorus in both whole blood and serum, increase in urea and nonprotein nitrogen, frequently a decrease in chlorides and invariably a great increase in blood viscosity, with which is associated a decrease in plasma volume.

Atonia, depression, diarrhea and dyspnea are also readily induced by too large dosage, according to Hanson². McCann⁹, in his contribution to the book on Glandular Therapy to be issued by the American Medical Association, says that from a careful study of the literature he finds at present there are definite indications for the use of biologically standardized parathyroid extract-Collip only in tetania parathyreopriva, infantile tetany, and those pathologic states in which low values for blood serum calcium are found. None of the preparations of the above substances at present available are entirely satisfactory. Local irritation is often very marked; and it is doubtful whether long continued use is possible without the additional use of calcium. Hueper¹⁰ also, in a very recent article, states that metastatic calcifications in various organs are produced by the injection of overdoses of parathyroid extract. Calcium precipitation in the kidney, heart, etc., causes considerable impairment and even fatal consequences.

Such caution for the proper therapeutic use of parathyroid hormone seems neces-

sary; the results of indiscriminate employment of similar prophylactic and curative agents by many physicians, such as in the case of iodine for goiter, justify this caution.

Calcium Metabolism and the Blood

An interesting aspect of calcium metabolism and one which is capable of great development in practical medicine is the connection between the blood clotting time and the blood calcium level. Sollmann and Von Oettinger²³ state that, although it is only since 1879 that it was observed that the presence of calcium favored the clotting of blood, yet Pitcairn, in 1717, had observed that certain plant juices had the same effect. This, as the writers quoted state, was probably due to precipitation and disintegration of the blood calcium by the organic acids of the plant juice. Variations in the blood calcium level may also render it more or less resistant to organic or inorganic poisons. Matthews and Austin²⁴, in a recently published paper, have shown that hypocalcemic animals are less resistant to magnesium sulphate, for instance, than are animals with a normal blood calcium level; also that hypercalcemic animals are more resistant than the normal.

The rapidity with which a sufficiently permanent hypercalcemia can be induced may be an important aid in carrying out surgical or other operations in which an important loss of blood is feared, and apparently offers a therapeutic possibility which is worthy of further investigation.

Vitamins in Calcium Metabolism

Following the discovery of the fat-soluble vitamin A, in 1913, investigators for a long time believed that the known antirachitic and skeletal-growth-governing principles of certain fats were attributable to their content of this fat-soluble vitamin. More recent work has, however, demonstrated that the organic factor concerned with deposition of calcium and preventing its excretion was quite distinct from vitamin A, although possessing somewhat similar physical and chemical qualities. In 1921 Hart, Steenbock and Hoppert²⁵, in the course of some experimental work in cattle feeding, carried out in the Department of Agricultural Chemistry, of the University of Wisconsin, observed that the same unknown factor affecting calcium assimilation, resident in green oats and green grass, was also present in cod-liver oil.

Steenbock and his associates²⁶ again, in 1923, showed that the administration of cod-liver oil from which vitamin A had been removed, nevertheless caused the inorganic phosphate and calcium of the blood to be restored to normal, and they suggested that there was in cod-liver oil an antirachitic vitamin as an entity, distinct from the fat-soluble vitamin A.

This view was not, however, quite generally accepted. Boas and Chick²⁷ considered from their investigations that the influence of cod-liver oil upon calcium deposition was not to be attributed to specific properties peculiar to that substance but to its high content of fat-soluble vitamin A, since a similar effect upon calcium deposition could be demonstrated in the case of cow's milk, the degree depending on the diet of the cow and the amount of sunlight to which she had been exposed. However, in 1923, McCollum and his co-workers²⁸ experimentally demonstrated the actual existence of an antirachitic substance, distinct from fat-soluble vitamin A—a fourth vitamin (vitamin D)—whose specific property was to regulate the metabolism of the bones.

It is now generally accepted that the presence of this antirachitic vitamin is necessary for the metabolism and deposition of skeletal calcium; its presence moreover will often enable the body to retain and store calcium when otherwise there would be a loss. This antirachitic vitamin is abundantly present in cod-liver oil, which therefore has a specific effect in increasing the retention values of the mineral elements and initiating healing changes in calcium deficiency diseases. But, as Hart and his associates²⁹ point out, no improvement in calcium assimilation is observed from cod-liver oil "concentrates" containing the antirachitic factor unless they are fed dissolved in oil. Telfer³⁰ thinks that the prophylactic and curative effects of cod-liver oil in calcium deficiency diseases apparently depend on altered conditions of the gastrointestinal tract which permit free absorption of the mineral elements, this being the essential factor.

While the existence of an antirachitic vitamin is not questioned, there is doubt in regard to its exact nature. Nelson and Steenbock²⁶, Hess³¹, and others have shown that ultraviolet irradiation of many food-stuffs endowed them with antirachitic qualities; also that such result was probably

due to the presence of cholesterol. Rosenheim and Webster's¹¹ investigations showed that pure cholesterol could not be activated by ultraviolet rays and that the precursor of vitamin D was not cholesterol itself but some substance associated with it, probably a sterol. Further work has suggested that the responsible sterol is ergosterol, which was first isolated from ergot by Tanred Gyorgy¹² and others have reported complete clinical and blood chemistry recovery in cases of florid uncomplicated rachitis and of tetany following treatment with irradiated ergosterol.

It can scarcely be said that the exact nature of the origin and working of the antirachitic vitamin is yet settled.

The Need for an Ample Supply of Calcium in the Food

The presence of satisfactorily working parathyroid glands or the supply in the food of substances containing the antirachitic vitamin in abundance will not suffice, however, if there is not a sufficient supply of calcium to satisfy the needs of the organism.

The need for an adequate supply of calcium is especially important, not alone during the growing period, but in women during pregnancy and lactation. At such times, if the intake of calcium is not sufficient, the organic calcium stored in the bones and tissues may be depleted; lack of calcium in the maternal food may cause intrauterine death of the fetus or premature birth, according to Macomber¹³. The researches of Sherman and MacLeod¹⁴ on the calcium content of the body in relation to age, growth and food, have shown that animals may continue to grow on diets upon which the resulting calcium content of the body falls below the normal for their weight and age.

Two questions arise in connection with the food supply of calcium: first, the absorption from the intestine; and, second, whether it is possible, by large supply of calcium, to raise the blood serum calcium content.

Normally the urinary excretion of ingested calcium represents the excess of absorbed calcium over the metabolic requirements; the fecal excretion of calcium represents the unabsorbed part of the calcium intake.

Calcium solution, intravenously injected, gives rise to a more rapid urinary excretion than when taken orally.

The researches of Bergeim¹⁵ have shown that ingested calcium is absorbed in the upper small intestine, but that in rachitis it is excreted into the large bowel. The failure of absorbed calcium to be used in calcification is believed by Bergeim to be due to low phosphorus concentration of the blood and failure of phosphorus absorption, which probably depends upon defective parathyroid hormone regulation. Calcium absorption in the upper intestinal tract was observed to be most rapid when the phosphorus absorption was highest. Antirachitic substances also may act by elevating the blood phosphorus and consequently increasing calcium deposition.

Bergeim also found that when lactose was added to the diet there was a pronounced increase in the amount of calcium absorbed from the intestine. The influence of lactose (and to a lesser extent of dextrin and other carbohydrates) on calcium absorption was believed by Bergeim to be due to increased lactic acid fermentation of the intestinal contents. This pronounced effect of lactose should be considered in the preparation of milks for infant feeding, etc.

Roe and Kahn¹⁶, in a recent report, state that the low absorbability of calcium from the intestine, when mixed with food, is probably due to alkaline digestive fluids being secreted into the intestine; that is to say, that the solubility of calcium is depressed by the alkaline digestive fluids. The writers think, therefore, that the best therapeutic results are obtained by the oral administration of calcium lactate in 5 Gm. doses, in aqueous solution, half an hour before breakfast. Simultaneous ingestion of food and lactate produced a marked depression of the rate of absorption of calcium from the intestine.

Telfer¹⁷ also states that most of the ingested calcium is rendered soluble by the acid of the gastric juice; but that it is precipitated in the intestine when the contents become alkaline. The addition of acid to the diet increases absorption of calcium, while alkali hinders it.

In regard to the elevation of the blood serum calcium content, Kahn and Roe¹⁸ found the level raised after the administration of calcium lactate orally, which was absorbed from the intestine like any other diffusible substance.

The rise in blood calcium concentration varies according to the size of the dose,

but is not strictly proportional to the amount taken. Twenty-gram doses gave an average maximum elevation of 81 percent between the fourth and fifth hours following administration, and a sustained elevation above normal for approximately four hours. Five-gram doses gave an average maximum elevation of 80 percent between the sixth and seventh hours following ingestion and maintained an elevation above normal for approximately nine hours. Two-gram doses gave an average maximum elevation of 41 percent at the sixth hour following ingestion and a sustained elevation above normal for one and one-half hours. These findings are in disagreement with the work of other investigators who have asserted that the blood calcium concentration cannot be increased by oral administration of calcium salts; but they confirm the work of Hjort¹¹ who found definite elevation of the blood serum calcium in dogs given calcium salts by mouth. Both Denis and Corley¹² and Halverson and his associates¹³ failed to find any increase in the blood serum calcium following the ingestion of calcium salts or calcium-rich diets.

According to Greenwald¹⁴, when the parathyroid glands have been removed the liberal administration of calcium salts raises the level of the blood serum calcium to normal and prevents the development of tetany.

As in the case of parathyroid hormone therapy, a word of caution should be given in connection with the administration of vitamins and cod-liver oil in the treatment of calcium-deficiency metabolic troubles. A recent editorial in the *Journal of the American Medical Association*¹⁵ refers to an article by Grant¹⁶ regarding the effect of the calcium, vitamin C and vitamin D ratios in diet on the permeability of the intestinal wall to bacteria. From this it appears that calcium in excess favors infection by the *Bacillus aertrycke*; and, when given with an excess of vitamin C, as many as 75 percent of the guinea pigs studied have been infected.

Intestinal ulcers were produced with a deficiency of vitamin C and developed more rapidly and showed less inclination to heal when the diet contained also an excess of cod-liver oil. The editorial writer thinks it reasonable to consider the bacillary invasion to be secondary to digestive tract mucosal changes and refers to an article

by Cramer¹⁷ which suggested that the whole vitamin activity is dependent on intestinal wall changes, producing a secondarily deficient or altered absorption and an increased local susceptibility to infection. It is further suggested that changes in intestinal absorption or permeability are associated with vitamin deficiencies or imbalances and may be themselves responsible for many of the deficiency diseases.

Calcium and Phosphorus

Ravdin¹⁸ believes that the effect of an increase of calcium in the ordinary diet results in an increase of the phosphorus in the feces and a decrease of it in the urine. Excess of calcium tends to restrict phosphorus to the intestinal tract and cause its elimination as tricalcium phosphate.

Telfer and Paton found that, with a diet rich in calcium but deficient in fat, the urine could be rendered phosphorus-free; i.e., phosphorous absorption was prevented. These writers also showed that the fixation of phosphorus in the skeleton was dependent upon a simultaneous fixation of calcium. The two elements are so closely interdependent in their excretions and utilization that the metabolism of one can not be considered without that of the other.

The absorption of calcium is dependent upon the free acid of the gastric juice, and foods that are acid-forming increase calcium retention and fixation. If the calcium retention can be increased, increased phosphorous retention will follow.

Since the phosphorus of most diets is in excess of the calcium, the conversion of the calcium which escapes into tri-calcium-phosphate is almost inevitable. The addition of these elements to a normal diet (in fracture cases with delayed union) would ordinarily be useless unless, for some reason, there is defective retention of calcium and phosphorus.

It is evident that much experimental and clinical work remains yet to be done to determine the precise action of vitamins; their relation to each other and their therapeutic applications. Meanwhile much circumspection is necessary in regard to their indiscriminate use.

Sunlight and Calcium Metabolism

From the observations of a number of investigators there appears to be little doubt that exposure of the animal body surface to natural or artificial sunlight can favorably affect calcium metabolism. The

mode of action of light in this regard does not, however, appear to be yet clearly understood.

Experiments by Clark¹ "seem to prove that radiating blood serum with ultraviolet increases the percentage of dialyzable calcium in the serum, a sufficiently long radiation bringing the calcium to its point of maximal diffusibility. It is possible therefore that the curative action of ultraviolet rays, in the low calcium form of rickets, is due to an increase in the diffusible calcium of the blood plasma or tissue lymph."

Moritz² says that a rachitic animal may have a normal amount of blood calcium, and if that animal be exposed each day to ultraviolet rays for a given number of days, calcification is stimulated and rickets cured. But intermittent irradiation over several days' time produces no significant changes in the percentage of the diffusible calcium of the serum.

An editorial in the *Journal A.M.A.*³ says, "It has been well established that the assimilation of calcium in the growing organism may be facilitated in a noteworthy degree by an abundance of vitamin D in the diet, as well as by its apparent analog, exposure to ultraviolet radiation, either in the form of the sun's rays or through artificial means."

The effect of ultraviolet irradiation of foodstuffs has already been referred to.

Newer Therapeutic Uses

Loewenstein⁴ uses calcium, combined with certain endocrine secretions, in a substance which is commercially known as subtonin. When injected intravenously this causes a rapid and more or less lasting fall in blood pressure. Several curves are given showing a fall from 210 to 165; 180 to 135; 180 to 125, etc.

The author believes that this calcium effect is due to its action on the vagus and sympathetic systems.

Intravenously injected, calcium modifies the blood, the most striking effect being in the changed relation of leukocytes and blood platelets.

Leff and Spencer⁵ found that the intravenous injection of 25 cc. of a 2-percent solution of calcium chloride, favorably influenced the course of gonorrhreal epididymitis and rheumatism. They mention some other authors who found similar results.

Pottenger⁶ directed attention to the value

of intravenous injections of calcium chloride in *bronchial asthma* and for the relief of *pylorospasm* or *enterospasm* in *tuberculous patients*, these conditions being due to vagotonia caused by excess of potassium over calcium ions.

Crainicianu⁷ found, in a large series of cases of *ovarian insufficiency*, that calcium lactate corrected the disturbed vago-sympathetic balance which resulted.

Pasquale⁸ says that calcium salts are indicated in infective diseases; osteomalacia; surgical and pulmonary tuberculosis; as an antihemorrhagic coagulant; in gastroentero-catarrh; for diuresis; edematous nephritis; bronchial asthma; tetany; chorea; otosclerosis.

Puech⁹ mentions calcium as a cardiotonic and cites a number of favorable reports in literature; while Sheppard¹⁰ states that calcium administration is very valuable in sprue.

Summary

The literature of recent years is reviewed in regard to the necessity for calcium in the organism; its content in the blood serum; and its deposition in the bones and other tissues.

References are made to recent work pointing to the importance of the parathyroid hormone in the regulation of blood serum calcium, and its therapeutic use as a prophylactic and specific in tetany of different types.

Furthermore, the importance of vitamins in connection with calcium metabolism is discussed; especially the effect of the anti-rachitic vitamin in bringing about deposition of calcium in deficient bone growth and the nature of this vitamin. The need for an ample supply of calcium in the food is shown.

The effects of ultraviolet rays upon the calcium metabolism are noted, and it appears that, when giving parathyroid or ultraviolet treatments, it is necessary to administer sufficient calcium to obviate its withdrawal from the bony structures into the blood.

Bibliography

- 1.—Anderson G. H.: *Brit. J. Child. Dis.*, 21:107 (Apr.-June), 1924.
- 2.—Briggs, A. P.: *Proc. Soc. Exper. Biol. and Med.*, 23:137, 1926.
- 3.—Marrack, J. and Thacker, G.: *Biochem. J.*, 20:580, 1926.
- 4.—Salvesen, H. A. and Linder, G. C.: *J. Biol. Chem.*, 58:635, Dec., 1923.
- 5.—Shipley, P. G. and Holt, L. E., Jr.: *Bull. Johns Hopkins Hosp.*, 40:1, Jan., 1927.

6.—MacCallum, W. G. and Voegtlin, C.: On the Relation of Tetany to the Parathyroid Glands and to Calcium Metabolism. *J. Exper. Med.*, 11:118, Feb., 1909.

7.—Greenwald, I.: *J. Biol. Chem.*, 59:829, March, 1924.

8.—Ipponsugi, T.: *Mitteil. u. allg. Path. u. patholog. Anat.*, Sendai, Japan, 3:195, 1926.

9.—Kramer, B. and Tisdall, F. F.: *J. Biol. Chem.*, 53:241, August, 1921.

10.—Hanson, A. M.: The Hormone of the Parathyroid Gland. *Proc. Soc. Exper. Biol. and Med.*, 22:560, May, 1925.

11.—Collip, J. B.: The Extraction of a Parathyroid Hormone. *J. Biol. Chem.*, 63:395, Mar., 1925.

12.—Collip, J. B.: The Calcium Mobilizing Hormone of the Parathyroid Glands. *J.A.M.A.*, 88:565, February 19, 1927.

13.—Collip, J. B.: *J. Biol. Chem.*, 63:395, March, 1925.

14.—Hunter, D. and Aub, J. C.: *Quart. J. Med.*, 20:123, January, 1927.

15.—Crile, G. W.: *Endocrinology*, 9:301, July-August, 1925.

16.—Lisner, H. and Shepardson, H. C.: *Endocrinology*, 9:383, Sept.-Oct., 1925.

17.—Collip, J. B. and Leitch, D. B.: *Canad. M.A.J.*, 15:59, January, 1925.

18.—Snell, A. M.: *J.A.M.A.*, 86:1632, November 21, 1925.

19.—Collip, J. B.: *J. Biol. Chem.*, 63:395, March, 1925.

20.—McCann, W. S.: Parathyroid Therapy. *J.A.M.A.*, 88:566, February 19, 1927.

21.—Hanson, A. M.: *Proc. Soc. Exper. Biol. and Med.*, 22:560, May, 1925.

22.—Hueper, W.: *Arch. Path. and Lab. Med.*, 3:14, January, 1927.

23.—Sollmann, T. and von Oettinger, F. F.: *J.A.M.A.*, 86:898, March 20, 1926.

24.—Matthews, S. A. and Austin, W. C.: *Am. J. Physiol.*, 79:708, February, 1927.

25.—Hart, E. B., Steenbock, H. and Hoppert, C. A.: *J. Biol. Chem.*, 48:33, September, 1921.

26.—Steenbock, H. and Co-workers: *J. Biol. Chem.*, 58:69, November, 1923.

27.—Boas, M. A. and Chick, H.: *Biochem. J.*, 18:433, (No. 2), 1924.

28.—McCullum, E. V. and Associates: An Experimental Demonstration of the Existence of a Vitaminine Which Promotes Calcium Deposition. *J. Biol. Chem.*, 53: (Aug.), 1923.

29.—Hart, E. B., Steenbock, H., Kletzien, G. W. and Scott, H.: *J. Biol. Chem.*, 71:271, Jan., 1927.

30.—Telfer, S. V.: *Quart. J. Med.*, 20:1, Oct., 1926.

31.—Nelson, E. M. and Steenbock, H.: *J. Biol. Chem.*, 62:575, 1926 and 64:299, 1925.

32.—Hess, A. F. and Weinstock, M.: *J. Biol. Chem.*, 64:181, 193, 1925.

33.—Rosenheim, O. and Webster, T. A.: *Lancet, Lond.*, 1:306, February 5, 1927.

34.—Gyorgy, P.: *Klin. Wchnschr.*, 6:580, March 26, 1927.

35.—Macomber, D.: *J.A.M.A.*, 88:6, Jan. 1, 1927.

36.—Sherman, H. C. and MacLeod, F. L.: *J. Biol. Chem.*, 64:459, June, 1925.

37.—Bergeim, O.: *J. Biol. Chem.*, 70:35; 51, September, 1926.

38.—Roe, J. H. and Kahn, B. S.: *J.A.M.A.*, 88:980, March 26, 1927.

39.—Telfer, S. V.: *Quart. J. Med.*, 17:245, April, 1924.

40.—Kahn, B. S. and Roe, J. H.: *J.A.M.A.*, 86:1761, June 5, 1926.

41.—Hjort, A. M.: *J. Biol. Chem.*, 65:783, October, 1925.

42.—Denis, W. and Corley, R. C.: *J. Biol. Chem.*, 66:609, December, 1925.

43.—Halverson, J. O., Mohler, H. K. and Bergeim, O. J.: *J. Biol. Chem.*, 32:171, November, 1917.

44.—Greenwald, I.: *J. Biol. Chem.*, 67:1, Jan., 1926.

45.—Editorial: *J.A.M.A.*, 88:570, Feb. 19, 1927.

46.—Grant, A. H.: *J. Infect. Dis.*, 39:502, Dec., 1926.

47.—Cramer, W.: *Lancet*, 1:1045, May, 20, 1923.

48.—Ravdin, I. S. and Jonas, L.: *Ann. Surg.*, 84:1, July, 1926.

49.—Clark, Janet H.: *Am. J. Hyg.*, 3:481, July, 1923.

50.—Moritz, A. R.: *J. Biol. Chem.*, 64:81, May, 1925.

51.—Editorial: *J.A.M.A.*, 88:729, Mar. 5, 1927.

52.—Loewenstein, W.: Ueber die Beeinflussung des erhöhten Blutdrucks durch Calcium. *Klin. Wchnschr.*, 5:354, February 26, 1926.

53.—Leff, C. O. and Spencer, O. M.: *J. Urol.*, 16:307, October, 1926.

54.—Pottenger, F. M.: *Am. J. M. Sci.*, 167:203, February, 1924.

55.—Crainiciu, A.: *Presse Méd.*, 34:545, May 1, 1926.

56.—Pasquale, N.: I sali di calci in terapia. *Morgagni*, 67:998, 1925.

57.—Peuch, A.: *Gaz. d. hôp.*, (Paris), 98:749, 1925.

58.—Sheppard: *Am. J. Trop. Dis.*, 6:443, Nov., 1926.

Headache in Infancy and Childhood *

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HEADACHE, the most common symptom in the practice of medicine, holds a prominent position in diseases of childhood. While not so frequent a complaint in early life as it is among adults, still it is much more prevalent in childhood than is generally appreciated. Infants probably are not quite so frequently affected as older children, and in the latter, the headaches are due to much the same causes as in adults. In children, the hereditary tendency to headache is a marked characteristic. Often the first symptom of serious brain disease in the child is headache.

Being a subjective symptom, its presence in infancy and early childhood is not easily

determined, but there are certain actions of the infant in the presence of headache which are often quite suggestive. These are: pounding of the head, pulling of the hair, putting the hands to the head, and wrinkling the eyebrows or frowning. Besides these more or less direct indications, in the child too young to talk, there are many objective symptoms occurring in various disorders of infancy with which the subjective symptom of headache may be logically assumed to be associated. Among these objective symptoms are apathy or listlessness, sleeplessness or disturbed sleep at night, loss of appetite, vomiting, convulsions, and coma.

In rickets, headache has rarely if ever been described as a symptom. But it is

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reasonable to assume that it is present in many of the active cases of this disease. A certain German author has described a rachitic dementia in florid rickets. It is known that in rickets there is considerable nervous disturbance: The infant is restless at night; he is fretful and does not sleep well. There is much sweating of the head. Most rachitic infants show an absence of hair over the occipital region of the scalp, due to the constant restless rolling of the head on the pillow. Such symptoms certainly must be associated with headache.

Very often, in older children, the presence of headache cannot be positively determined, because the child will often say "no," when asked if he has a headache, although the symptoms seem to point that way. But when the child does complain definitely, the etiology must be determined just as in adults.

Classification of Headaches

The most frequent headaches occurring in childhood may be classified as those of (1) *Toxic Origin*—produced by such conditions as: (a) disturbances of digestion, (b) uremia, (c) malaria, and (d) acute infections; those due to (2) *Constitutional Disorders*—such as: (a) anemia, (b) malnutrition, (c) nervous exhaustion; those of (3) *Nervous Origin*—as in: (a) neurotic children, (b) epilepsy, (c) hysteria, (d) organic disease of the brain and meninges; and those of (4) *Reflex Origin*—due to diseases of the: (a) nose, (b) eyes, (c) ears, (d) teeth, (e) throat, and (f) sinuses of the head.

Headaches of Toxic Origin

A common cause of headache in childhood is constipation. The pain is usually located over the top and back of the head, is intensified by exertion, and may be associated with nausea and even vomiting. It is relieved by proper evacuation of the bowels, by means of enema or cathartic. Acute indigestion also gives rise to headache in young children, perhaps more often than in adults. It is frequently the initial symptom in an attack of acute dyspepsia.

In any child over six months of age, persistent constipation and causeless vomiting, associated with headache, is always suggestive of tuberculous meningitis.

Headache is often the first symptom of acute nephritis, and is always present in chronic nephritis and uremia. The pain may be quite severe and persistent, and

may be associated with vomiting and dizziness, leading to a suspicion of cerebral tumor. It may, on the other hand, be of a recurring type, resembling the attacks of cyclic vomiting. One should not forget to examine the urine in these cases. The headaches of nephritis are not only due to toxic causes, but also to local, as there has been found an edema of the pia-arachnoid in cases of uremia.

In malaria and in most acute infections, headache is often a prominent symptom. Of toxic origin also are the rheumatic headaches, occurring in children of rheumatic parents. It is a very frequent complaint in chorea, and often an early one. In this disease there has been found a vascular engorgement of the pia mater and underlying cortex, indicating the pathologic changes responsible for the symptom.

Most of the acute infectious diseases of childhood are associated with headache. In these, the pain is acute in onset and course. It is an especially prominent symptom in diphtheria, and occurs frequently during the onset of scarlet fever. It occurs fairly often in measles, but rarely in whooping cough and German measles. Chickenpox is usually a mild infection, but when severe, headache and backache are usually present and simulate the intense headache and backache of smallpox. In typhoid fever headache is an important symptom. A dull, constant, frontal ache with fever, lasting for a week or more, is diagnostic. Influenza gives rise to a sudden onset of severe orbital and frontal pain. Here the headache is probably both of toxic and sinus origin. In pneumococcus pneumonia and in acute bronchitis, headache is rarely complained of by the child. It is also of but little importance as a symptom in acute poliomyelitis.

Among headaches of toxic origin may also be included those due to allergy or anaphylaxis—sensitivity to foreign proteins in meat, eggs, milk, and other articles of food. It is present in protein shock. Tuberculin injections have frequently been followed by headache. Inhalation of volatile oils, such as banana oil and paints, often produce this complaint.

Constitutional Disorders

There are various constitutional disorders of childhood which commonly give rise to headache. Among these, anemia is found to be a frequent cause. The headaches of leukemia, pernicious anemia, and chlor-

osis are of a more or less persistent nature. They are probably caused by vascular changes in the brain. In malnutrition, usually associated with anemia, headache not infrequently occurs. Nervous exhaustion often gives rise to headache as a rather persistent symptom.

Hereditary syphilis quite commonly is associated with pain in the head, particularly in the later stages of the disease. Often, it may be the only symptom for a long time, and sometimes it may assume the character of a hemicrania. In the headaches of congenital, as well as of acquired syphilis, evening exacerbations are characteristic.

Headaches of Nervous Origin

The acute meningeal affections necessarily give rise to headaches. In cerebrospinal meningitis, they are sudden in onset and continue in paroxysms of great severity as long as the disease is active. Following the subsidence of the acute illness, there persists a tendency to this complaint. In purulent meningitis the headache is terrific. In serious meningitis also it is quite severe. The headache of tuberculous meningitis is usually intense and constant, but many cases of this disease occur without much, if any, headache.

Acute inflammation of the brain substance—encephalitis—also produces severe headache. Cerebral tumor and abscess are other local causes. These give rise to a chronic form of headache with vomiting and, later, visual changes. Sometimes these headaches gradually disappear, due to the softening of the skull over the tumor, but not before irreparable damage has been done to the eye-grounds.

Pituitary headache occurs most often in adolescents, but has been described in younger children. The cause is usually a pathologic enlargement of the hypophysis, giving rise to an intense, bursting ache between the temples, deep in the forehead, behind the eyes. These headaches may be continuous or may last for one-half hour to 48 hours and then leave suddenly. They are accentuated by excitement or stooping over and by ingestion of sugar. There may be nausea and vomiting, followed by relief. In children, there may be mental retardation, dullness, sluggishness of mind, and lack of higher reasoning power.

Far more common than the headaches of organic nervous disease, are those due to functional nervous disorders. They are

exemplified by the headaches which occur with such great frequency in neurotic children. Those children who have reached school-age are more commonly affected than the younger ones. In these children, suffering from their hereditary defect or neuropathic taint, the headaches are a stigma of degeneration. The least excitement, the least over-exertion, a little extra pressure from school-work—and the child has a headache, sometimes so severe that it simulates migraine.

The socalled growing headache also occurs in this type of children, between nine and twelve years of age. They are poorly nourished, pale and chlorotic. They grow rapidly. They are easily fatigued by mental effort. Their headaches are usually frontal, worse during school-hours or towards evening, and subside after a good night's rest.

Sometimes these headaches are closely related to rheumatism, which is a common feature in the personal or family history of these nervous children. There seems to be an intimate relation between the neurotic tendency in children and the rheumatic tendency. Both are inherited. Chorea, which is a neurotic disorder, is produced by the rheumatic poison. In other words, the child most likely to develop chorea from a rheumatic infection is the child born with a neurotic tendency. In chorea, headache is frequently an early complaint. In the absence of chorea, there exists the headache of inherited rheumatism. This is usually severe and simulates the onset of meningitis. It is often accompanied by pains in the joints, muscles, and nerve-trunks. Some observers describe rheumatic headaches as being synonymous with muscular or indurative headaches, in which there are painful indurations or nodules in the neck muscles. These are undoubtedly of rheumatic nature, but they rarely occur under twenty years of age.

Migraine and Epilepsy

One of the most severe headaches of adults is migraine. Migraine is distinctly a hereditary neurosis, and occurs in childhood as frequently as in adults. In fact, most cases of hemicrania in later life can be traced to early childhood. It is true, however, that the attacks in children are not so severe. It is also not necessarily a hemicrania, and there are usually no visual signs. But in both children and adults there are the same periodic bouts of severe

headache and vomiting of bile. In the child there is a tendency to pyrexia. This, with the repeated vomiting, usually leads to a diagnosis of cyclic vomiting. Migraine and cyclic vomiting have much in common. In the latter, headache is a prominent symptom. Besides, cyclic vomiting occurs in children of neurotic tendency and, in later life, it is often replaced by migraine.

In idiopathic epilepsy, in which heredity also plays an important part, headache is common, sometimes as premonitory of an attack, but more often following the attack. The complaint of headache upon arising in the morning, together with nocturnal enuresis, is highly suspicious of a petit mal attack during sleep. With this disease too, migraine seems to be closely related. Often the history of migraine or severe headaches can be traced in the parents of the epileptic child.

Headache may be a very obstinate symptom in hysteria. It is distinguished from that in neurasthenia by being localized to a small area and of a boring nature—the hysterical clavus. In neurasthenia the headache is a sensation of pressure, like a tight band around the head.

Reflex Headaches

Reflex headaches, or headaches due to disease elsewhere than in the brain or meninges, include perhaps the largest class of headaches occurring in children as well as in adults. Affections of the eyes, ears, nose, sinuses, and teeth are responsible for most of these. One of the most excruciating headaches is that due to affections of the frontal sinus, where the nasal passage is blocked and a partial vacuum results in the cavity. The pain is intensified by the use of the eyes.

Headaches due to eyestrain because of refractive errors are very common in children. The diagnosis is important in these cases, because immediate relief can be obtained by the proper treatment.

Chronic headache, associated with ear-ache, is pathognomonic of enlarged adenoids. The pain, as a rule, is occipital in location.

Carious or abscessed teeth are a much more frequent cause of headache in children than is generally appreciated. In this connection, the headaches occur daily, often several times a day. They are erratic in onset and disappearance. They may come and go quickly. They are not localized like a neuralgia, but may be referred to the whole frontal or occipital region. They

often are not simultaneous with toothache. Removal of the etiologic factor relieves these headaches at once.

Summary and Conclusions

1.—Headache, one of the commonest of human symptoms, is probably as frequent in infancy and childhood as in later life.

2.—The presence of headache in infants and children too young to talk, must be assumed from certain actions and objective signs.

3.—Headache is probably more prevalent in many constitutional disorders of infancy than has generally been appreciated. Rickets is one of these disorders in which headache is probably often present.

4.—Heredity plays an important part in headaches of infancy and childhood.

5.—Migraine is probably as frequent in children as in adults, when its close connection with cyclic vomiting is considered.

6.—For most headaches in infancy and childhood, the same etiologic factors exist as in adults.

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Discussion

Dr. Dietrich Klempner:—The time has passed when pediatricians considered a child just a smaller copy of an adult. We have learned that the physiologic and pathologic laws in the child are different from those in the adult. It was interesting therefore to learn from the essayist that the etiologic factors of headache are the same in the child as in the adult, except in their relative frequency. Thus vascular diseases of the brain are a rarity in the child, while functional and endocrine disorders are more common than in the adult.

We must admit the importance of headache as a diagnostic sign, but it sometimes happens that we miss the headache in a syndrome of which it is usually a part, and in its place, alternating and substituting for it, depending upon the peculiarities of the individual and the degree of the pathology, other signs occur that may be called equivalents of headache and that have the same diagnostic significance. These signs are: confusion, coma, convulsions, nausea and vomiting. As an illustration I may mention the headache due to intestinal toxemia. Convulsions may take the place of the headache in the same syndrome and respond to the same treatment.

The major part of the treatment of headache consists in the proper diagnosis, and it is a source of satisfaction to be able to

cure chronic disabling headaches by attending to infected teeth or tonsils, hypothyroidism or any other controllable cause.

Dr. Meyer Solomon:—Headaches are acute and transient, or acute and persistent, or recurrent and periodic. When a child complains of headache, a useful way of eliminating causes is to consider the following groups:

1.—Acute, infectious disease—extra-cranial conditions (pneumonia, etc.), producing mainly acute transient types; and intracranial (meningitis, etc.), being responsible particularly for acute, persistent types.

2.—Chronic, organic disease, within (such as—rarely—brain tumor, brain abscess, etc.) or without the nervous system (cardiovascular-renal disorders, etc.)

3.—Extra cranial, local head conditions—ear, nose and throat involvement (including sinus disease), and especially visual defects.

4.—Migraine.

5.—Irregular habits and poor personal hygiene.

Visual defects, migraine, and irregular habits are the most common causes of recurrent and periodic headaches.

I would stress headaches due to irregular habits, because such cases are often erroneously attributed to other causes and require a careful history with a survey of the living conditions; hours of sleep; amount of work; amount and kind of food for the various meals, including breakfast; the general management of the home; the nutritional and nervous condition of the child; etc.

This means a study of the child's routine life, itemized, hour by hour, for a week or more. In such cases you may have to reorganize the patient's method of living and often the home conditions, so that you then have not merely a patient but a whole family and even more to handle. Unless you gain the family's cooperation, you are working under a handicap. This brings up the problem of child training and parental guidance. With reorganization of the habits, many headaches (even in migrainous children) clear up. A careful history is thus of the utmost importance.

There is no evidence that, by pure suggestion, wish or will, by simulation or hypnosis, headache can be produced. Emotion, by the peripheral changes induced, may cause headache, but mere suggestion,

whether auto- or heterosuggestion, cannot. Children, to gain their ends, may often complain of headache when it is not present and act as if it was present; but careful cross-examination and observation will show the absence of any pain.

Dr. Frank J. Novak, Jr.:—The nasal sinuses were formerly much neglected but are now more carefully studied.

There are two types of sinus disease: suppurative and non-suppurative. The latter are harder to diagnose but may cause severe headache, by pressure, if there is a hyperplastic process in the ethmoids and sphenoid. The roentgenogram will show this condition, if made properly. It requires a low voltage, long exposure and careful interpretation.

All hyperplastic cases show a low basal metabolism (-6 to -12, in adults). The normal basal metabolism is higher in children than in adults, and this must be considered in making the diagnosis.

Dr. Burton Haseltine:—Headache is a poor term. It does not tell whether the pain is intracranial or extra cranial. Sinus pain is no more true headache than is tic douloureux. Extra cranial pain is always due to local causes.

Referred pain has an anatomic basis, and the nerve connection must be *extraganglial*.

Migraine has been facetiously defined as: "A headache which you cannot cure." There may be a true migraine, but if so it is rather rare.

Dr. Maximilian Kern:—A lowered basal metabolic rate is not due to thyroid deficiency alone but to general endocrine dysfunction. Large doses of thyroid substance (1 grain, 4 times a day) will frequently stop headaches by stimulating metabolism, but they make the patient very nervous.

The child has a higher metabolic rate than the adult because it is restless and frightened, therefore such readings should not be considered truly basal.

Various nasal disorders may be due to pituitary conditions; and many "migraines" are petit mal epilepsy, as is indicated by the fact that a ketogenic diet stops the headaches.

Dr. Ralph H. Kuhns:—Headache in infants and children is a very common symptom and one which requires careful handling on the part of the physician. The presence of this condition in infants is of course, difficult to recognize, due to the inability of the patient to express himself. Many

children, also, are unable to properly explain what is bothering them, and often do not know just what is meant by the parent or physician when asked. "Have you a headache?" It is also difficult for them to localize the pain, and I would like Dr. Sherry to tell us, if possible, how we can localize the pain in these little patients.

A very important point which was emphasized by Dr. Solomon is that the headache of anemia and malnutrition must not be overlooked. Malnutrition has begun to receive the attention which it needs; and following the work of Dr. Emerson, of Boston, there have been established in many communities the nutrition classes or clinics, and these underweight children are being properly treated.

The parents are also in need of treatment in many instances, and I frequently have more trouble with the grandmother than I do with the child. Many parents are proud of the fact that they have a delicate child; and headache is, of course, often found in the delicate child. Many parents are so anxious for their children to be at the head of the class that they are willing to sacrifice health and strength, and in making the children exert an undue amount of effort to excel, these children are converted into nervous individuals with the ever-present headache.

Dr. Sherry gave a complete classification of the types of headache, but I believe he did not mention two or three important ones which now occur to me. I refer to the congestive type found in cardiac disease, also to the type found in girls of the age of puberty, in whom menstruation is difficult or delayed. I would like to have him tell us about these two conditions.

Dr. Sherry also spoke about "inherited rheumatism" in children, and as this condition is one which I do not understand, I would like to know just what he means by that term. I have been under the impression that there is only one disease which can be transmitted to the fetus, and that is syphilis.

Dr. Novak spoke of the work being done at Iowa City by Drs. Byfield and Dean. These men are operating on the nasal accessory sinuses in children, claiming thereby, to relieve many conditions due to an absorption of toxic material by the system. I think it is only fair to mention the fact that one of your own members first suggested to Dr. Byfield that it would be wise to investigate the ethmoid region

in asthmatic children. Dr. Haseltine made this suggestion to Dr. Byfield, and I understand that, at the University of Iowa, the treatment is now being carried out along these lines.

Dr. Sherry, closing discussion:—Among the earliest symptoms of rickets are restlessness at night and sweating of the head. The bald spot on the occiput of so many apparently healthy infants may be taken as evidence of early rickets which has been arrested. The headaches of rickets, if present, are probably due to a hypocalcemia, just as are the other nervous manifestations of this disease.

Nausea, vertigo, convulsions and coma, included among some of the associated symptoms of headache, may just as properly be termed equivalents of headache in childhood.

Being a subjective symptom, headache might readily be confused with other pains above the neck. Children, of course, cannot describe a symptom accurately. Many adults are not much better in this respect.

From a medico-legal standpoint the objective signs of headache are of little value. They are merely presumptive signs, just as cessation of the menses is a presumptive sign of pregnancy.

Intestinal parasites may cause headaches by producing disturbances of digestion, toxemia, or anemia. The headache of allergic origin comes under the class of toxic headaches; those in intracranial injury are due to local pressure or irritation; and those present in cardiac disease, are due to circulatory disturbances in the brain. It has been found that just before the menstrual period in women, there is often an acute enlargement of the hypophysis. Thus, the headaches of delayed menstruation in adolescent girls may be included under those due to pituitary disturbances.

Treatment, of course, depends upon the cause, the discovery of which, however, is often a very difficult matter. A careful physical examination is always necessary, including examination of the urine. In an infant or young child, severe headache points strongly to organic disease of the central nervous system. In older children, the most frequent causes of headache are, aside from the acute infections: first, digestive disturbances; second, nervous exhaustive system; third, malnutrition, and; fourth, visual disturbances.

The Value of Music in Hospitals

By ISA MAUD ILSEN, R.N., New York City

Director of Hospital Music, War Department C. T. C. A., Washington, D. C.; Director of Music in Reconstruction Hospitals, American Red Cross; Associate Secretary and Director of Hospital Music, New York Tuberculosis and Health Association; Director of Hospital Music, National Association for Music in Hospitals.

PHYSICIANS and surgeons—many of them—have acknowledged the beneficial effects of the right kind of music on patients suffering from almost any kind of disease, either of the body or the mind, and some have even expressed themselves as definitely as Dr. Egbert Guernsey, who said, in the *Medical Times*, "If every hospital and asylum included in its medical staff a musical director, and if every physician and trained nurse understood the nature of the action of music, there is no telling the good that might be accomplished, the lives brightened and the tangled brains restored to harmony."

Does music begin where medicine ends? No, but it can go right along, hand in hand with medicine. Its exact, scientific scope is not yet defined but great progress has been made during the past few years.

The World War gave the "concord of sweet sounds" its greatest impetus, along the lines of hospital music, both as a kind of soothing syrup and as an energizing force for those ill in military and civil institutions. Faith and vision, plus persistent energy and the rare gift of true service, are proving that music, under a definitely organized plan, is bringing its curative blessing to suffering humanity. The superintendent of a large hospital recently gave the following to the press: "In the hospital under my jurisdiction I have found nothing that can take the place of music, in reducing the mental rebellion that many patients experience from their prolonged hospital confinement." Esquirol wrote, "While divine music will not heal a broken bone or check the invasion of bacteria, it serves, under all circumstances, to calm and soothe the mind, and is a precious agent that ought not to be neglected."

To bring music to the sick for entertainment and diversion is not a new enterprise, but to work out *every* detail of the programs which are brought to the *very bedside* of patients in a way designed to bring the best results, and to be an active aid to the medical treatment they are having, is *quite another matter*. This is a new service though the idea is not new. In the Crimean War, Florence Nightingale, that incomparable nurse, with an almost uncanny intuition of what her patients needed, asked for music to cheer and aid the wounded soldiers. Her request met with the warm approval of eminent physicians and surgeons in England, but there is no record of music having been used. It was not until the World War that a Director of Music in Military Hospitals was appointed, the United States being the first and, so far, only country to act along this line.

The applicability of music in military hospitals led to its establishment in civil hospitals, and the privilege was given me of organizing and carrying

on ward musical programs in almost a score of tuberculosis hospitals in the state of New York. A great number of stories of the effect of these ward musical programs upon the physical, mental, moral and spiritual state of these tuberculous patients, proved beyond a doubt the value of organized music in hospitals. During a three months' experiment, where four wards were set aside in a very large institution, the two experimental wards were the happiest, and while this did not prove anything, scientifically, the 120 charts kept did tell the story of better bodily functioning than those in the control wards.

One patient, a musician by the way, provided an instance of real scientific interest. On hearing that a musical program was



Music Hour, Sea View Hospital, Staten Island.

to be given one afternoon, he requested that the door of his room be kept closed as he had found that music, unless in a certain tempo, occasioned difficult breathing. The head nurse's report was interesting and I made a point of seeing him. He said, "Music in 4/4 time makes breathing easier, and in 6/8 time it quiets my pulse rate and reduces my temperature." He welcomed music in the tempo he had expressed a wish to hear and gained rapidly. The day he was to have a minor operation he asked for music, which it was impossible to give him in the operating room, as the surgeon could not be disturbed.

Now, after three years, a device to be attached to a phonograph is nearing perfection, by means of which it will be possible to give the patient any sort of music his temperament and nationality crave, either in the anesthetizing room, while taking an anesthetic, or during an operation under a local anesthetic. Headphones convey the music to the patient who will be the only one to hear it.

Speaking of nationalities represented in hospitals, sometimes it is necessary to have songs in half a dozen languages in a single ward, and it is wonderful when the singer or musician goes to the bedside of one who does not understand our language and offers his artistic best, in voice or on instrument, in the form of melodies known since childhood. There can be no more grateful or appreciative audience and no occasion when the musician can more poignantly realize the power of music and what it means to give freely of a "divine" gift. One Italian woman who had been in the hospital nearly a year used to revel in typical Italian tunes and also some of the old opera selections. The music undoubtedly hastened her return to health. When she was told she could leave the hospital, cured, she exclaimed joyfully, "Oh! your music make me well! Now I go home to my bambino!"

Right and Wrong Use of Music

This musical activity in hospitals is by no means a matter of just singing or playing for the patients or having just anybody do it. Not at all. Two things may seem the same and yet not be the same. In many instances the wrong use of music and personality is a detriment to the sick.

In what way is it possible to carry on ward musical programs without interrupting hospital regime? The answer to this is,

by having the director of music thoroughly trained in hospital ethics and in music, to enable her (or him) to prepare and to direct, successfully, the right kind of music for the patients, in the right way. A tactful individual, possessing common sense and a proper grounding in hospital regimen, should not experience anything but the finest cooperation from those in charge when taking organized music to those ill in hospitals.

Organized music, for want of a better term, means: (a) Music rightly chosen as to words, character of composition, tone-color, rhythm, intensity, repetition and melody, all so combined as to soothe, to give hope and to stimulate interest in life to those hearing it; (b) music that is appropriate—that is, rightly rendered by the right people—by musicians possessed of a personality to bring cheer, able to go through their part undaunted by any emergency that might arise in the ward—artists who will so render the music they bring that the patients will say, "The music in our hearts we bore, long after it was heard no more." The nerves and memories of the sick retain impressions of the music and the musicians much longer and more vividly than do those of the normally active who have many diversions; (c) The proper use of the right musical instruments, from a psychologic view-point. A portable organ never should be played where sick people are. "Groan boxes," "wheezers" and "tear-drops" are terms which have been applied to them by those afflicted by their sound.

The psychologic state of a sick person is usually exceptionally sensitive, and what may seem an insignificant detail to one in health may assume great importance to the same person when ill; so music, if it is to be a successful adjunct to hospital treatment, must have system and be organized, the same as any other part of the hospital service.

If any of our loved ones are ill, we do not allow any musician to invade the home, much less the sick room, and yet, today, hospitals and wards are being visited by musicians good, bad and indifferent, oftentimes robed in black, lugubriously gazing at the sick, untrained in hospital rules, standing by in helpless sympathy, giving any sort of music in any way on any kind of instrument, to the extreme annoyance, if not the great detriment of the patients, and

with the absolute disapproval of those in charge, who rightly visualize the after effects in extra hours of service spent in soothing the frazzled nerves of those in their care.

Why should these musicians—people with the best intentions in the world and a longing to do good and be helpful—be allowed to enter hospitals in this capacity, when physicians, internes, nurses, occupational therapists and social workers are all trained? Why this musical indifference toward those for whom a hospital was called into existence? It is significant that the medical superintendent of one of New York's great hospitals, where an organized ward musical program had been given, believed so thoroughly in its value that he took a course in musical appreciation in order to use the knowledge thus gained for the benefit of his patients.

In this day of rapid strides in the treatment of the sick, the time is near at hand when a department of music, founded on a thorough training in hospital rules, managed on a thoroughly scientific and therapeutic basis, will be a branch of the hospital service. Without this foundation a well intentioned musician or choir or club might easily become a nuisance to the hospital authorities and a hindrance to the recovery of patients, thus defeating the purpose of music.

It should be a matter of municipal pride to have a director of music in every large hospital; or several small hospitals could have the director, such as was done in war time in military hospitals. Every insane asylum should have on its staff a director of music. Within the past few months three state institutions have besought my assistance, or that I send them someone trained in such a vocation.

If funds and trained hospital directors of music could but fall as manna from Heaven, what a harmonious world this would be! Many a homesick, weeping patient has been changed into a smiling, hopeful one by hearing, on admittance, the lilt of a song or a tuneful melody, as a sort of friendly greeting, and being smilingly told this was his serenade.

Before going into more technical details of the kind of music available, which instruments are best, and other facts that govern these programs, a fair idea of the discipline attendant upon this function may be gleaned by the following list, which the

volunteer musicians abided by in war times, and which still serves:

Under no condition must hospital routine be interrupted or interferred with. Strict adherence to this principle has made such notable progress in this work possible. The artists who so generously give of their art realize that transgressing any of the rules for ward behavior is fraught with dire consequences. Patients are frequently in a highly sensitive state, easily hurt and easily irritated. The work of much painstaking treatment may be undone by a few moments' careless and unthinking zeal on the part of an outsider. Even unrestrained sympathy is an evidence of bad judgment, which often can undo the work of months. It is pointed out, that while some of these don'ts may seem arbitrary, in that they apparently cover circumstances that appear trivial and quite unnecessary to the uninitiated, they are, in reality, of prime importance, and their careful observance will make secure the anticipated successful results.

Rules for Hospital Ward Musical Programs

Do Not fail to remember that the consent of the physicians in charge of the hospital must be secured, and that the cooperation of the superintendent and her assistants is indispensable.

Do Not forget that musical programs must be given only on days and at hours selected by the physician in charge.

Do Not fail to observe most carefully all clinical and hospital regulations and usages.

Do Not enter any ward without first securing the permission of the doctor or nurse in charge.

Do Not ask patients questions or comment on any phase of hospital work; it is not your business.

Do Not sit or lean on beds.

Do Not eat food offered by patients or distribute anything to patients.

Do Not use a portable organ, or have a cello selection played without accompaniment. From a psychologic and physiologic standpoint, these instruments are undesirable.

Do Not wear somber colors or evening dress. Dress in something light and dainty.

Do Not use sad or plaintive musical selections. Select pieces and compositions possessing joyous notes.

Do Not insist on an accompaniment to your voice. Unaccompanied singing is necessary in ward work, and often the violin alone is imperative.

Do Not ask patients to sing in wards unless the doctor or nurse in charge requests you to do so, but encourage the patients to ask for musical selections.

Do Not move pianos without asking permission.

Do Not use more than four musicians for a program, and only those actually performing should be in the ward.

Do Not give any instrument to any patient without first obtaining the doctor's approval.

Do Not bring any visitors with you.

Do Not fail to use TACT and COMMON SENSE.

Steinway Hall.

Bleeding from the Genitourinary Tract*

By A. M. BENNARDI, M.D., Cleveland, Ohio

Urologist to Glenville Hospital

THE causes usually responsible for the presence of blood in the urine may be classified as medical and surgical. For the sake of simplicity I shall enumerate them and lay particular stress on those conditions which are amenable to surgical treatment.

1.—Ingestion of certain drugs; e.g., mercury, copaiba, lead, arsenic, cantharides and quinine.

2.—Acute general infections; e.g. morbilli, scarlatina, variola, yellow fever, malaria, plague, pneumonia, enteric fever.

3.—Blood diseases; e.g. scurvy, leukemia, purpura, hemophilia.

4.—Parasitic infestation, bilharzia hematoia being the most important.

5.—Extremely acute gonorrhreal urethritis.

6.—Ptomaine poisoning.

7.—Inflammation of the kidneys.

8.—Inflammation of the bladder.

9.—Chancre of the urethra.

10.—Essential hematuria (?)

11.—Back pressure on the kidneys, due to disease of the heart and blood vessels.

12.—Kidney embolus.

13.—Renal varix.

14.—Advanced syphilis of the bladder or kidney.

15.—Injury to urinary tract.

16.—Strictures of the urethra.

17.—Stones of the kidney.

18.—Tumors of the bladder, kidney or prostate.

19.—Foreign bodies in the urethra or bladder.

20.—Tuberculosis of the kidney or bladder.

21.—Prostatic hypertrophy—"Prostate of the old man."

In considering this interesting question, we must remember that the day for the treatment of the symptoms alone is of the past. Prior to the invention of the cystoscope and the x-ray it was admissible to prescribe ergot, rest and ice-bags over the bladder region, temporarily controlling the hemorrhage which soon returned, with premature death frequently following.

Thanks are due to such men as Roentgen and Nitze—the former for the x-ray invention and the latter for the primitive cystoscope. Such instruments have revolutionized genitourinary surgery and placed this specialty on an accurate, scientific basis.

It is far safer and wiser to regard bleeding as a forerunner of some serious condition in the bladder, prostate gland or kidney. The attending physician should never be satisfied until the cause of the bleeding has been established. It has been said that it is against professional morality to treat urinary bleeding with this or the other drug. We may cite the bleeding which occurs in elderly women. Time is precious and is often wasted on so-called treatment and a wonderful opportunity lost, until it is too late to remove the cancerous womb, and the woman's life is sacrificed by the delay. The same holds true of the first appearance of blood in the urine. If the attending physician waits for the second or third attack of bleeding before insisting on making a diagnosis, the tumor of the bladder may have extended and become inoperable or the stone in the kidney may have completely destroyed the organ and with it the patient's chance for life through operation.

Blood in the urine, therefore, regardless of the amount, calls for immediate investigation and determination of the cause. Does the bleeding come from the bladder, pros-

*Presented in the Surgical Symposium held at Glenville Hospital, October 6, 1925.

tate or kidney? If it be of kidney origin which one? Or does it come from the urethra?

Oftentimes palpation of the prostate reveals nothing, in which case recourse must be had to other means of investigation. The invention of the cystoscope was the beginning of the era of genitourinary surgery. Through this electrically illuminated instrument, accurate diagnosis of the kidney, bladder and hypertrophy of the prostate was made possible.

The most common cause of bleeding from the bladder is probably tumor. Next in order come either tuberculous ulcers of the bladder or stone. Prior to the days of the cystoscope stones were frequently missed, and tumors, ulcers and tuberculosis of the kidneys could not be diagnosed at all.

The tropical disease known as bilharziasis is another condition that we must think of and, although it is a medical curiosity when found, yet it must be kept in mind where a cosmopolitan population is present.

In the event of finding a normal urethra or bladder we must at once suspect the kidney as the source of the hemorrhage. Renal conditions causing bleeding are most frequently stone of the kidney and tumors of various types.

Tuberculosis of the kidneys gives rise to hemorrhage by ulceration of nodules in the kidney and the opening of a blood vessel. The pathology is identically the same as in pulmonary tuberculosis. To establish definitely the character of the disease in the kidney and also whether the right or left kidney is affected, is one of the triumphs of modern surgery. With the cystoscope one can sometimes see the blood escaping from one of the ureteral openings. This, however, is not sufficient. Ureteral catheterization should be made use of.

Deep intramuscular injection of 15 minims of a 5-percent methylene blue solution serves to determine the secreting power of the kidneys. Under normal conditions a stream of blue urine is seen issuing from the ureteral openings in from 10 to 15 minutes. In a diseased kidney the excretion of blue is delayed, according to the damage present. Oftentimes from 30 to 50 minutes pass before the slightest appearance of the blue dye is seen.

Specimens from both kidneys can be obtained simultaneously and a chemical, microscopic and bacteriologic examination

can be made. The quantitative test for urea from the right and left kidneys is also important for the determination of kidney efficiency.

The third step in the diagnosis consists in having an x-ray picture of the kidneys and the bladder region taken by a competent roentgenologist, for without this, one can not be sure of the presence or absence of kidney stone. For stone of the bladder, the cystoscope is preferable since it can be seen more readily and moved about. Very often the shadow produced on the x-ray film is indistinct and the stone escapes detection. Renal fluoroscopy is essential, especially prior to surgical intervention.

Thorough investigation is the keynote of diagnostic accuracy. Oftentimes, repeated cystoscopic examinations are necessary to solve the puzzling problem. Certain physical properties of the urine are significant and invariably give us a clue to the origin of the blood.

Locating the Source

Bleeding from the Urethra.—When there is bleeding from the anterior urethra, blood oozes from the meatus independent of micturition.

Bleeding from the Prostate.—In bleeding from the prostate or prostatic urethra, the bladder urine is bloody. The two-glass test shows blood in both glasses, the second more than the first, owing to the regurgitation of blood into the bladder. The age, history, clinical and urinary examination must be taken into consideration. Wash the bladder with a soft rubber catheter until it is free from blood, and if the remainder is voided mixed with blood the source of the hemorrhage is below the vesical sphincter.

Bleeding from Bladder.—Hemorrhage from the bladder, if profuse, gives a pronounced red color to the urine. If collected in three glasses, the last will contain the most blood.

Bleeding from the Ureter.—Bleeding from the ureter is usually characterized by long clots.

Bleeding from the kidney.—Bleeding from the kidney is diagnosed by excluding all other sources. The blood is thoroughly mixed with the urine and there is no separate quantity of fresh blood. The three-glass test shows a uniformity of blood in all of them.

In Tumor of the Kidney we have bleeding which appears and disappears without

apparent cause. Loss of weight, a mass in the loin, increasing pain, a feeling of weight, cancer cells and tumor fragments in the urine complete the diagnosis.

Tuberculosis of Kidney.—Frequency of urination is very suggestive when accompanied by renal bleeding. The appearance of blood comes on without apparent cause. The germ of tuberculosis is usually found and the diagnosis established.

Nephritis.—In nephritis, large numbers of red blood cells always indicate the acuteness of the condition. Arterial pressure, according to Castaigne, is of value. If high we may suspect the presence of interstitial changes in the kidney. This particular condition is of greater interest now than ever before, since the enforcement of national prohibition law substituted actual poison for the harmless glass of wine and beer.

Report of Cases

Case No. 1.—Mrs. J. T.; age 40; weight 130 pounds; housewife. Complained of pain in left lumbar region, radiating to lower left iliac fossa. Bloody urine at different intervals; slight burning sensation on urination; has lost twenty pounds in weight since 1914. Her first attack was followed by vomiting with subsequent exhaustion. She underwent an appendectomy in the summer of 1914 and a double oophorectomy in 1918. Artificial menopause established with little or no discomfort. Pain continued as before, however.

On October 1, 1922, I did a cystoscopy and bilateral ureteral catheterization under local anesthesia. Capacity of bladder normal; slight congestion of mucosa; ureteral openings normal in appearance; a No. 5 ureteral catheter was introduced into left and right ureters and met with no obstruction.

Specimens from both kidneys were obtained and studied. Chromocystoscopy normal; left showed many red cells, otherwise negative; right kidney was clear.

X-ray study disclosed a stone about the size of a chestnut in the pelvis of the left kidney. Blood pressure, blood count, blood chemistry within normal limits.

On October 9, 1922, she was operated upon. A pyelolithotomy proved the calculus to be slightly smaller than the plate showed, porous in character and deeply embedded in the inner, lower portion of the kidney pelvis.

Twenty-four hours after returning from the operating room the chart reading indicated a gradual rise in pulse rate, temperature and respiration. The following day her condition was slightly worse. Wound drainage was not free. Removal of two sutures produced the desired effects and her condition improved. At present she is in good health; has gained twenty-five pounds; x-ray check-up revealed no stones

in any part of genitourinary tract. Last saw her September 10, 1925.

Case No. 2.—Mrs. E. M.; age 45; weight 123 pounds. Complained of blood in the urine for past two years; frequency both by day and night; strangury; loss of weight and appetite; insomnia; feels miserable.

Personal past and family history of no medical importance save the fact that her mother died of cancer.

Cystoscopy done under local anesthesia; capacity subnormal. A sloughing, cauliflower mass, bleeding freely, was seen occupying almost the entire bladder floor (See Fig. 1). Ureteral openings could not be seen. A provisional diagnosis of bladder carcinoma was made and later corroborated by histologic report.

She was informed of her condition and submitted to a transvesical incision on January 23, 1923, I removed as much of the tumor as possible and Dr. L. P. treated the remaining mass with radium.

She left for her home on February 20, 1923, the hematuria having ceased. She gained four pounds in weight; frequency was not so marked; condition was slightly better, as compared to her previous cachexia.



Fig. 1.

She was re-admitted to hospital May 3, 1923. Symptoms grew worse. She died of sepsis ten days later.

Case No. 3.—Mr. J. McL.; tailor; 59 years of age; weight 168 pounds. Past personal history of no consequence. Family history negative. *Chief complaints:* Frequency of urination for past eight years, especially at night; unable to empty bladder contents; burning sensation along the entire urethra; noticed blood in urine for past week; is very nervous; insomnia; gradual loss of weight; tires easily; unable to concentrate on his work.

He was hospitalized October 17, 1923, on account of an attack of acute urinary retention. This was relieved gradually by a small coudé catheter. Digital examination

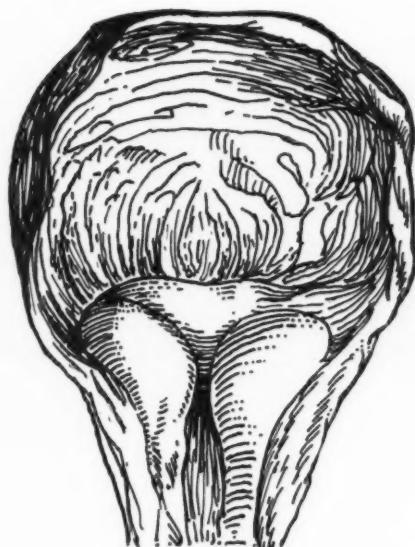


Fig. 2.



Fig. 3.

of the prostate revealed bilateral adenomatous masses (See Fig. 2). A provisional diagnosis of prostatism was made, which was later confirmed by cystoscopy, done under local anesthesia. The posterior urethral distortion, a common condition in hypertrophy of the prostate, offered some difficulty. Characteristic lateral intrusion could be clearly seen; the middle lobe was also enlarged; trabeculations were numerous; ureteral openings were visible.

X-ray study of the urinary tract showed no calculi. Blood urea showed 45 mg. to 100 cc.

A soft rubber catheter, No. 18, was tied in place for continuous bladder drainage. Phenolsulphonephthalein test was 20-percent in two hours. Two weeks later a gradual decline of the blood urea and an increase in phthalein output was noticed.

On November 25, 1923, he was pronounced a good surgical risk and a one-stage, suprapubic prostatectomy was done. He left the hospital December 21, 1923; vesical fistula closed January 15, 1924; last saw him August 20, 1924. He urinates freely, is working every day and enjoying good health.

Case No. 4—Mr. F. A.; age 56; weight 158 pounds; cabinet maker. This case was seen by me in consultation May 29, 1923. Past personal history and family history revealed nothing of importance. **Chief complaints:** For past four months has noticed blood in his urine at different intervals, two weeks ago the hemorrhage was quite profuse; there is slight frequency but no urgency or pain associated with micturition.

Cystoscopic examination done, under local anesthesia; met with no obstruction along the urethra; bladder capacity was normal. Visualization of the bladder disclosed generalized chronic cystitis, trabeculations and a bleeding, pedunculated mass about the size of a small walnut, above and to the left of the corresponding ureter (See Fig. 3).

A provisional diagnosis of potential carcinoma of the bladder was made and the pathologic report substantiated this. Renal efficiency test normal; blood count showed slight secondary anemia; blood chemistry within normal range; Wassermann test negative; other clinical findings satisfactory; x-ray study negative.

On June 17, 1923, a cystotomy was done. I removed the mass comparatively easily and Dr. L. P. treated the remaining stump with radium. Convalescence in this case was slow. The suprapubic fistula healed in ten weeks. He has experienced no return of former symptoms and is in good health. Last saw him October 1, 1925, when a secondary cystoscopy was done showing fibrous tissue formation at site of previous tumor.

Conclusion

The aforementioned considerations strongly suggest that blood in the urine is usually a serious expression of almost any pathologic condition in the genitourinary tract, and we must apply every diagnostic measure at our command to locate the primary source of the bleeding and every effort to correct it, if within the realm of justified surgery.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

[Note: The Seminar is devoted entirely to the practical interests of surgeons. Problems and their discussions are solicited. Contributors must give their names, but whenever desired these will not be published. Questions for this department should not exceed fifty words. Address all communications for the Seminar to Dr. G. M. Blech, 108 North State Street, Chicago.]

Surgical Diagnostics (Continued)

Beginning with the socalled functional disturbances of the stomach, symptomatically characterized by moderate *hyperacidity*, the gastroscope will show in many such cases pronounced reddening of the mucosa. This reddening does not disappear even when the rheostat is turned on to produce the maximum amount of light. In other cases we encounter circumscribed red spots, which occasionally resemble the branchings of a tree, all of which undoubtedly are nothing more nor less than erosions of the mucosa.

It may be remarked here that similar erosions are noted in undoubted cases of gastric ulcer, as, indeed, it is gastroscopically impossible to differentiate the erosions of hyperacidity from those of *gastric ulcer*. What is of greater scientific interest is the fact that, without the gastroscope, science has no means of establishing the histologic changes in the mucosa in the non-operated cases, and it is through this instrument that we have an opportunity of explaining why simple hyperacidity causes pains.

The value of gastroscopy is certified to by a directly opposite condition; namely, *achylia gastrica*. Here, when the stomach tube and chemistry tell us that the gastric secretion no longer exists, the gastroscope shows a strikingly pale mucosa. Whether this condition is a purely local one or due to a general anemia, I am not competent to discuss, but the mere proof of the existence of a local anemia, in the absence of gastric secretion, gives every thinking physician who tries to explain vague symptoms by actual pathologic changes, a good deal of food for thought.

The gastroscope, in addition to the superficial erosions of ulcer already mentioned, allows us also to differentiate between a round and a callous ulcer. The former is

seen as a round or ovoid defect of the mucosa, whose depth can be easily recognized. The color is bright red, surrounded in most instances by a somewhat less deeply colored ring. These ulcers show a whitish or yellowish deposit, which according to some authors is produced by saliva, mucus or remnants of food, while other authors have regarded it as a deposit of fibrinous material.

Elsner has described one case of *callous ulcer* which he has observed. He found the defect to be deeper, funnel shaped and covered by material which appeared rather dark in color. Elsner believes that callous ulcer appears very much like a carcinoma, with this difference, that the defect appears sharply margined as if punched out by a punching iron.

Carcinoma of the stomach appears either in the form of a solid or cauliflower tumor or else as an ulceration. The tumor formation will be recognized only in the early stages—which again suggests the great value of gastroscopy—as growths of pale red color, which are distinctly separate from the rest of the mucosa. Occasionally a necrotic change in the growth may be recognized. More often, however, the observer will see a crater-like ulceration whose base is soiled by blood coagula, necrotic shreds and remnants of food or mucus. The margin of the ulceration is irregular and is never as sharply defined as in a benign callous ulcer, as already described; so much so that this very irregularity will strike even beginners, who have never seen a malignant ulceration before, to an extent to enable them to make a correct diagnosis.

While it is true that *direct laryngoscopy, tracheoscopy and bronchoscopy* should be performed only by specialists trained in this kind of work, we present brief discussions solely for the sake of rounding out this serial.

The apparatus needed for this class of work has great similarity with the esophagoscope and the gastroscope, differing in the construction solely to meet the different anatomic structures. Of course every one is familiar with the simple laryngo-

scopic mirrors with which the vocal cords can be seen by almost any practitioner who commands a good reflected light or a self-lighted instrument and who has learned the knack of pulling out the patient's tongue by a piece of gauze or similar material, of making the patient breathe easily and of placing the mirror in a position to show the epiglottis. As a matter of fact, that maneuver alone will not suffice if one have no special training in interpreting what one can see in the mirror; but even if that knowledge be had, the examination can reach only the most superficial structures, and the trachea and the bronchi remain sealed books. This "indirect" method is now replaced by specialists, in suitable cases, by the socalled "direct" method or, as it is also known, "autoscopy." By this method access is obtained by stretching the normally angular larynx, while the base of the tongue and the epiglottis are forced forward. Bronchoscopy is merely a deeper inspection, secured by pushing the instrument to the desired depth.

For our purposes it may suffice to enumerate the indications for direct laryngoscopy. Of course this method will be applied when, for some reason or other, the older method cannot be carried out, or when it is necessary to obtain a view which cannot be reached by "mirroring," such as for foreign bodies, stenoses due to trauma or disease (syphilis), tuberculous processes and tumors in parts of the larynx which are not easily accessible.

In addition, tracheo-bronchoscopy is indicated when there is compression of the trachea by goiter, mediastinal tumors, aneurysms and intratracheal tumors such as fibromas, papillomas and even goiter.

Of more practical interest, even to general practitioners and surgeons, is the examination of the anus, rectum and sigmoid. From the ordinary digital and simple speculum examination, has been evolved *procto-sigmoidoscopy*, and as this method presents scarcely any technical difficulties we will discuss it a little more in detail.

(To be continued)

Discussion and Solution of Problem No. 8 (See August issue, p. 620)

Recapitulation. This problem concerns a middle aged teacher, who has been afflicted with "stomach trouble" for a long time.

Lately he complained of cramp-like pains in the stomach, followed by vomiting of greenish material. During attacks he has no bowel movements and passes no flatus. After repeated attacks of this kind he became seriously ill. For the past two days he shows icterus and, as his pains radiate towards the right shoulder, stone of the biliary apparatus is diagnosed by the family physician and the patient is sent to the hospital for operation.

Routine examination of the rather collapsed patient shows data which seem to confirm the diagnosis of cholecystitis, with possible stone in the common duct; yet on account of the sensitiveness in the epigastrium and the muscular defense being more pronounced at that place, the preoperative diagnosis must rest between biliary disease and a perforated duodenal ulcer.

At any rate, operation being indicated, the abdomen is opened and turbid, sero-sanguineous fluid escapes from beneath the liver. Examination of the entire biliary apparatus, stomach and duodenum reveals nothing abnormal.

With the two original diagnoses now being recognized as erroneous, the problem presents itself: how to proceed?

Discussion by Dr. Herman J. Kooiker,
Albert Lea, Minn.

The clue to the trouble in this case is furnished by the finding of the turbid sero-sanguineous fluid coming from the liver after the abdomen was opened.

Correlating this with the preoperative findings, we must come to the conclusion that the most likely seat of the trouble is in the liver or lesser peritoneal cavity. The chronicity of the case points in all probability to an abscess due to amebic infection.

The procedure now to be followed is to pass the hand into the abdomen and to palpate systematically the whole surface of the liver, searching for localized swelling, adhesions and resistant, tense bogginess. Exploratory puncture can now be made with accuracy and safety under the customary precautions. Once pus is found it should be evacuated by the most direct route. The condition of the patient dictates whether the operation can be completed at once or whether a two-stage operation is preferable.

We already have signs of sepsis and exhaustion and, accordingly, immediate

drainage is of paramount importance. The route of drainage depends on the location of the abscess. If located anteriorly or near the anterior, inferior border of the liver, anterior drainage is the logical procedure. If it so happens that adhesions are present which exclude the drainage tract from the general peritoneal cavity, we are fortunate indeed, for otherwise precautions must be taken to wall off with gauze or by any other safe measure.

As a general rule the abscess is located in the right lobe, in which case the thoracic route is applicable. Effective approach is secured by resection of the eighth rib and, if need be, of the ninth rib also, in the midaxillary line or posterior to it. If it proves necessary to go through the pleura, the costal part of it should be carefully sutured to the diaphragm to shut off the general pleural cavity. Approach to the abscess is best obtained by incision of the capsule of the liver, followed by dissection with a blunt instrument to prevent hemorrhage.

While the abdomen is still open, one should not miss examining the pancreas, for pancreatitis may cause repeated attacks of epigastric pain and the other symptoms presented in this problem, even the inability to pass feces and flatus. It goes without saying that, if the organ is swollen and contains fluid or pus, it should be drained.

**Discussion by Dr. W. Herrington,
Green City, Mo.**

In considering the clinical history and findings up to the point when the abdomen has been opened we must conclude that we have an acute ileus, which, of course requires prompt operative intervention to remove the obstruction and guard against possible recurrences. In the search for ileus we must not restrict ourselves to locating and removing bands or adhesions of any kind but we must locate the appendix, since a "leaking" one may cause all this trouble. I, in common with others, have seen patients with histories and findings almost identical with those given in the problem, in which the sole finding was a gangrenous and leaking appendix, so much so that I am strongly inclined to the belief that this is the very pathology to be discovered on further search in cases like the problem as presented.

Editorial Comment

While it is true that, in the majority of complicated abdominal lesions, one must be prepared to encounter all sorts of surprises, so much so, that we have fallen into the habit of entering patients with the pre-operative diagnosis of "acute belly," leaving the final diagnosis open until after operation, nevertheless the diagnostics of acute abdominal lesions have progressed far enough to enable us to make correct diagnoses in very many instances. If I disagree partly with Dr. Kooiker, who, as usual, has sent in a very fine discussion, and if it so happens that the case does not turn out to be an appendicitis of the gangrenous type, as tersely presented by Dr. Herrington, this does not mean that these two contributors are criticized, because without being actually in the operating room the mind naturally turns to past experiences and both gangrenous appendicitis and liver abscess may be responsible for the symptomatology as described.

Let us not forget that it is one thing to diagnose an acute affection of the abdomen and quite another to diagnose a chronic one. In the latter case we have chemical and radiologic means which help the clinician to a very great extent. In the acute cases, especially in those in which operation is vitally indicated, any delay to secure a number of fine diagnostic data would be downright criminal.

I confess that the thought of liver abscess never occurred to us, for the simple reason that the temperature was too low for that, that the patient had had no chills or sweating and that the tenderness was away from the liver region, pointing to the stomach or duodenum rather than anywhere else. While I had very little time for a careful study of the case, that in itself is no excuse. It goes a little beyond the frame of our requirement to discuss the anteoperative diagnosis, but it will do no harm to comment on that. One of my associates did ask me how I can make a diagnosis of perforation of peptic ulcer with such comparatively mild symptoms, since perforation is followed by terrific shock, and my answer was and is that the perforation may be a "covered" one.

We now come to the point of our requirement proper. Here we are in the midst of an upper laparotomy and to our surprise the stomach, duodenum and, what is most astounding, the gall bladder, ducts and liver

appeared normal, macroscopically. Had there been ileus or appendicitis there would be no particularly difficult problem, because with the large incision necessitated by scientific gall bladder surgery—mind, I use the word scientific advisedly—it is an easy matter to detect pathologic conditions in the lower abdomen; but neither intestinal obstruction of any kind nor disease of the appendix was detected. Perhaps I should have stated that before placing the requirement, but I did not desire to curtail the scope of the discussion.

Would the presence of turbid, sero-sanguineous fluid in the free abdominal cavity help the readers? I wondered. To me it at once suggested a localized peritonitis with a focus hidden from view. The fact that the fluid came from beneath the liver had no pathognomonic significance, since fluid may accumulate there as elsewhere. The liver, as already pointed out, was found to be normal. There remained but one thought—the pancreas. Any affection of that organ would give abdominal symptoms as described, the only doubt in my mind being due to the fact that pancreatitis usually follows or accompanies disease of the gall bladder. I dreaded malignant disease, of course.

The steps taken were: Opening of the bursa omentalis between the stomach and the transverse colon. An even larger quantity of turbid, sero-sanguineous fluid than was found in the right abdominal flank came to view. This was sponged up and now we beheld a clear view of the pancreas. On palpation more than two thirds of the pancreas felt as hard as a piece of wood, while in the tail the finger encountered a peculiar softness, strikingly so when compared with the hardness of the remaining part. Naturally this could mean only an abscess, which was opened and drained.

The rest of the story has no bearing on the problem, but it may be stated that, for a day or two, convalescence was somewhat stormy, but after a few weeks, restoration to health was all that could be desired. Of course, the fistula produced by the drain required some time to heal.

The peculiarity of this problem was that only after the abscess had been opened did I subject the omentum to a thorough examination, when isolated spots of fat necrosis were discovered. As a rule fat

necrosis in pancreatic disease becomes apparent almost immediately after exposure of the abdominal cavity.

Finally, I want to say that Dr. Kooiker's study of liver abscess forms an interesting subject. We shall certainly take that up in some form or other in a future issue.

Case Report

By Dr. A. W. Bleil, Kansas City, Mo.

I have been very much interested in the discussion of Problem No. 7 and that particular case recalls to my mind an experience I have had which may be not without interest.

Some time ago I was hastily summoned to a local hotel to see a man, aged about 60. Upon arrival I found that he suffered with intense pain in the left lower quadrant of the abdomen. The pains were colicky and so severe that he could not sit up nor lie prone in bed, but "doubled up," like the pose taken by boys who have eaten too many of the proverbial green apples. Any attempt on my part to make an examination or even obtain a history was frustrated by the patient. He was in great misery, and something had to be done at once. I happened to have a fountain syringe with me and I gave him about a quart of a soapsuds enema, on the assumption that I might have to deal with a colonic, or rather sigmoid, impaction. Evacuation resulted promptly and in very large quantity.

Meantime two physicians, friends of the patient, were communicated with by one of his business associates and they phoned to send the patient to a hospital for diagnosis and, if need be, operation. Meanwhile the patient had so much improved that he told me that two days previously he was rushed from his office in another city to the train for a business trip, and that he partook of a poorly cooked steak, potatoes and Boston baked beans which were almost cold. He ate a rather large quantity of the latter. Since this meal he had been rushed by pressing business meetings.

My suspicion of a sigmoid impaction became rather strengthened, for certainly the man had not the leisure nor opportunity for an evacuation and the character of the meal was enough to aid such a condition. As a matter of fact the patient did not go to the hospital, for the simple reason that he did not need to.

Error No. 1

In presenting the following error-problem for discussion, the editor desires it to be understood that the surgeon in question is one representing skill and knowledge of the highest degree. I mention this solely to avoid the false impression that the error to be described is due to lack of training or experience, for the case is taken from the records of a hospital recognized as a center of learning, whose surgical service is presided over by a man of international reputation.

The case in question concerns a comparatively young woman who, after lifting a heavy burden, suddenly experienced sharp pains in the right inguinal region. She began to vomit and continued to do so for four days, when the vomitus had a fecal odor. On examination at the hospital

a pear-shaped hernia with plain signs of incarceration was found. As an attempt at taxis had failed, herniotomy was performed. In the sac was found a loop of bowel about one inch in length which contained fecal matter and gas. At the place of incarceration a thick probe could be introduced only with great difficulty. After division of the incarcerating ring, the bowel could be brought out and a dark brown discoloration appeared at the point of constriction. Gangrene of the bowel could be ruled out with certainty. This finding justified reposition. After the operation the patient passed some flatus and felt easier. But four hours later she again began to have fecal vomiting. Death occurred two days after operation.

Requirement. Was there an error? If the answer be affirmative, describe it.

GASTRIC SURGERY

Never make a diagnosis of "nervous dyspepsia" in long-continued hyperacidity, or in continuous anacidity.

Stomach ulcer without hyperacidity is very rare, if it exists at all.

Always be sure the stomach is empty before any form of "test-meal" is given.

Do not fail to look for blood in the stool—"occult" or "obvious"—in all chronic dyspeptics.

Never continue to distend a stomach when inflating or washing it if the patient should complain of pain. You may cause a part thinned by disease to give way.

Do not forget that pain in the back may be the first sign of cancer of the stomach.

Bear in mind that diminished hydrochloric acid and increased lactic acid are always suggestive of cancer of the stomach, but also that cancer of the stomach may be present and hydrochloric acid found in normal amount.

So long as the medical treatment of cancer of the stomach has a mortality of one hundred percent, it is your duty to recommend operation whenever you suspect cancer of the stomach or anywhere else.

Do not forget that pyloric spasm is often an early sign of gastric ulcer and dilatation of the stomach a late one.

In any operation on the viscera never hamper yourself with a small incision, but remember that if you conserve the nerve supply of the muscles you will have fewer herniae. If you find your incision too small, enlarge it at once.

Never forget that viscera are often adherent to the wall at the site of a scar, and that you are in danger of opening a viscus when incising the peritoneum in the line of a former incision.

Bernay's "Golden Rules of Surgery."

Clinical Notes and Practical Suggestions

A Symposium on Intravenous Medication

[Editorial Note: In the July, 1927, number of CLINICAL MEDICINE AND SURGERY we asked the opinions of our readers regarding intravenous medication and specifically propounded the following questions: (1) Do you use intravenous medication? (2) In what class of cases? What remedies? (3) With what results? (4) Are there advantages in giving drugs intravenously? (5) What are the advantages? Disadvantages, if any? (6) Is intravenous medication employed too much or too little? Why?

We have received some excellent replies to this questionnaire, several of which appear below, with the answers numbered to correspond to the original questions. We would be glad to see more answers as we believe this to be a very important subject, which should interest all physicians, especially practitioners who need all the help modern science can give them.—Ed.]

Dr. Houston Neeley, Beeville, Texas

1.—Yes, I use intravenous medication.
2.—In anemia and chlorosis, cacodylate of sodium or ferri arsenate; in neurasthenia, nervous hysteria and nervous indigestion, sodium cacodylate; following chronic malaria, after paroxysms are broken, I give sodium cacodylate intravenously for 12 to 24 treatments; in general debility with nervousness and loss of appetite, sodium cacodylate or ferri arsenate; in rheumatism or rheumatic arthritis, lumbago and sciatic neuritis I give sodium salicylate and sodium iodide with chalchicine or sodium cacodylate, combined. The iodide and salicylate in doses of 25 and 15 grains, intravenously, every day or every second day. In pyelitis or pyelonephritis or general pus infection, I give methenamin (hexamethylenamin), intravenously, in 30-grain doses, repeated every 12 to 24 hours to effect.

A recent case, which looked suspicious of tuberculous laryngitis, responded very nicely to intravenous medication of ferri-guaiaacol-arsenate and the throat cleared up nicely.

3.—The results, in the very large majority of my cases treated by intravenous medication, are highly satisfactory.

4 & 5.—The advantages are that, when drugs are introduced into the blood stream, you are certain of their effect, by appropriation of the remedy by the system. When given by the mouth, if the medication is digested, absorbed, and taken into the circula-

tion or blood stream your patient derives benefit from the treatment; otherwise not, for your medication passes as an inert substance through the intestinal tract without effect.

6.—I really believe that intravenous medication is only in its infancy and that as we learn more of the scientific use of internal remedies we will use intravenous medication more frequently and more intelligently, and will secure much more satisfactory results from our treatment and relieve our patients of the very disagreeable task of taking so many unpleasant doses.

I am rather enthusiastic in my belief and use of intravenous medication and sincerely hope to have the pleasure of reading reports pro and con on the subject from men of very much wider range of experience on this line.

Dr. C. O. Lawrence, Calera, Ala.

I would like to give my experience in Intravenous Medication, according to your request in CLINICAL MEDICINE AND SURGERY for July, 1927, page 495. I shall give answers to the questions in the order you have indicated.

1.—I have used this method—timidly at first, I admit—for the past nine years. I say timidly because my instructors in medical college described it with more warnings than encouragement. It was months after I began practicing before I could

muster the nerve. And indeed, when my first intravenous patient died, a few weeks after I had given him a "shot," I was not at all sure but that I had been the cause of his passing. But experience has given me confidence, and I now use it nearly every day.

2.—The principal classes of cases which I select are—syphilis, rheumatism, asthma, incipient tuberculosis, convalescent influenza, and secondary anemias from any cause. I apply the method only to adults, excepting those individuals who have obscure or very small veins or marked heart lesions.

The remedies I have used most and am most familiar with are neoarsphenamine, iron and arsenic, ferro-guaï-arsen, anti-rheumatic, cincosal, sodium iodide, uritone and sodium salicylate. The large number of preparations on the market makes it impractical for any one man to become familiar with them all, and I am always dubious when trying a new preparation.

Results are almost uniformly pleasing when, and if, I make the right diagnosis. The patient, as well as the doctor's purse, improves more rapidly than under the old teaspoonful-three-times-a-day system. The very fact that the doctor is not afraid to put a quantity of medicine into what, oftentimes, is an invisible vein raises him in the estimation of his patient. It gives the impression of skill and efficiency, and the sick man is willing to pay more for such service.

4.—Given an accurate diagnosis and a careful technic, this method certainly has a number of advantages.

5.—Advantages:

a.—One hundred percent availability. In some conditions the alimentary canal is not normally absorptive and therefore is not capable of handling either medicine or food; whereas, every single drop of medicine placed into the blood stream is immediately available.

b.—Eliminates frequent dosage of sometimes bitter and nauseous preparations.

c.—Quicker effect. A few days ago I was amazed to learn that after having given 5 cc. of cincosal to a rheumatic, he was relieved in three minutes.

d.—Means more office practice, and therefore more money for the doctor.

Disadvantages:

a.—Danger of sharp reaction. I make it

a rule to give a new patient a small dose, and watch him carefully before increasing it at the next office visit.

b.—Popular disapproval, unless the doctor can demonstrate his ability, and cite cases. I use a $\frac{1}{4}$ -inch, 23-gauge needle in all cases, and a simple, neat rubber cord tourniquet.

c.—Danger of infiltrating the solution into the tissues around the vein. Care and experience and a steady hand can avoid this.

6.—The method is probably employed too much by some overzealous physicians; and too little by some of us who have so long been accustomed to the oral route. In the one case there is a tendency to crankiness; and in the other to both crankiness and timidity.

I believe the happy medium lies in the use of the intravenous method only in selected cases; and in making the selection financial as well as medical. Not that the poorer cases do not receive the same increased benefit, but simply that the doctor can not do this work without a higher rate of remuneration.

Dr. D. D. Hamilton, Springfield, Colo.

In your valuable journal, July number, you ask for information on intravenous medication, and I am glad to give my experience.

1.—I have used intravenous medication for ten years.

2.—In influenza and pneumonia I use venodine, which is sodium iodide and guaiacol. This is fine for infection of any kind. In the severe cough that often follows a case of influenza, which drugs fail to relieve, I have had unbelievable results. It has never failed me. One or two injections a day will show results in two to four days, and they are permanent.

Rheumatism is much benefited by venodine and tuberculous cases do well on it, in half-size doses. I also use calcium chloride for tuberculous cases with good results.

Rheumatism cases are most benefited by sodium salicylate. Calcium chloride will do much in epididymitis. Anemia cases are much improved on iron preparations; and quinine for malaria is the only treatment to get results.

3.—Results are satisfactory and this method will help out on any line of treatment used.

4.—I think there is great advantage in using drugs directly into the veins; but cases should be selected for its use.

5.—The advantages are that results are to be expected in one, two or three days, when otherwise it would take a much longer time.

Disadvantages are that all people do not have veins large enough for this purpose. It requires training and experience to do the work properly and not make the arm sore, which discourages the patient and will soon discourage the doctor also. Too large a dose, given too fast and to the wrong patient will give a reaction, chill, etc., and the doctor will give it up unless he has had adequate training and experience.

6.—It is employed by those who know how, too little; and by those who do not know how, too much, the latter leaving bad after effects.

The physician usually has to convert the patient, the family, the neighbors and all the doctors in the community before he can start this treatment. Few country doctors know how to use it and as they can't use it they have a lot to say about it, which gets to the patient and prejudices him against it, when possibly it is the very treatment he needs.

I am one of those who believe that a large percentage of chronic cases, that fail to respond to ordinary treatment, are much benefited by neoarsphenamine, mercury and iodides; and it will surprise those who do not know to see how many will get better under this treatment.

I do not believe physicians should start using intravenous medication without proper training, under men who are skilled in its use, for entering the vein is a more delicate procedure than many think and I have seen many doctors who gave it up after the horribly sore arms and severe reactions that are sure to follow if it is not done right and the right preparation used, under proper conditions.

Any physician who will use intravenous medication and let the patient leave the office too soon is going to learn something and will have a dissatisfied patient and criticism from the other doctors. And if you do not do the work under strict aseptic conditions, you are simply looking for trouble. It is necessary to know many things.

One of the greatest mistakes is giving too large a dose to start with. Full doses

will cause reactions. There should be half-size doses of all ampules so as to avoid this trouble; besides, many patients can never take more than half doses and do not need them.

In cases where the vein does not stand out properly I have, for years, put the arm under a large radiant light, for five minutes, when the veins will stand out well after the tourniquet is applied to the arm. The little things count very heavily in the use of intravenous medication.

Dr. Alfred Kellett, Doddridge, Ark.

I employ intravenous medication for treating malaria, acute or chronic, using quinine dihydrochloride.

In fat patients, like some women and children, I use the vein in the ankle.

For rheumatism, with no organic heart disease, I use sodium salicylate intravenously; with organic heart disease, proved or suspected, I use digitalis in some form and then salsodide.

I use 40 percent of my medication intravenously; possibly 40 percent subcutaneously; and 20 percent mixed, such as a purge or a tablet or two of allonal for temporary nervousness or headache, or things of that sort. I think the intravenous route is our best and quickest way to reach the bacteria which float in the blood stream.

In malaria a temperature of 105°F. is not uncommon. Give 8 cc. of quinine hydrochloride, in the vein slowly, with an all-glass, Luer-type syringe. Watch the temperature drop in 30 minutes and your patient go home content.

I think I am safe in saying that I have given 5,000 intravenous injections in the last 6 years, for different diseases. I have never had a death. However, I have seen some nervous women become giddy from the sight of blood entering the syringe, but this is soon over.

[It is interesting to note that those who have replied to this little questionnaire are all in favor of intravenous medication. They all obviously know how to use it. Perhaps those who have had unfavorable results realize that these were due to faulty technic, and so lack strength in their negative convictions.

All seem to agree as to the value of sodium salicylate and sodium iodide (with or without guaiacol, colchicine or other drugs) in rheumatic conditions. These,

and the intravenous use of quinine in severe malarial infections, are almost as well established as the administration of laxatives in constipation and every physician should prepare himself to give them, in suitable cases.

The place of methenamin and its derivatives, such as salihexin, in the treatment of infections of the kidneys, ureters and bladder, also seems to be unassailable and there appears to be no reason why they should not be given in every suitable case.

Our experience with the value of the salts of arsenic, iron and strychnine in the treatment of that vague and protean host of symptoms called "neurasthenia" agrees fully with that of Dr. Neely. We feel that they are used far too little, especially since it is true that many of these drugs can also be given hypodermically or intramuscularly with excellent results.

The reasons for preferring the intravenous route seem obvious—greater promptness, certainty and exactness of results obtained. The contraindications seem to be chiefly a lack of skill and confidence on the part of the physician, rather than anything inherent in the patient or his disease. The mechanical difficulties arising from small and inaccessible veins can usually (but not always) be met by the ingenious physician who knows anatomy and physiology, as suggested by Drs. Hamilton and Kellett.

Some of the points stressed by Dr. Hamilton are especially important. Intravenous injections are not so complicated and difficult as a gastroenterostomy, to be sure, but they require a specialized surgical technic which must be *thoroughly learned* by those who expect to use them successfully. To the patient, there are no "little things". We have seen the room where a man had given a few doses of arsphenamine look like a slaughter-house; and, on the other hand, we have personally given a dozen intravenous doses of this drug, by the gravity method, in rapid succession, without the loss of a teaspoonful of blood, all told. There is no reason why an injection with a hand syringe should cause the loss of a single drop of blood.

Intravenous medication has not only come to stay but its field of application is steadily and rapidly growing, and the work of Dr. Burr Ferguson (see CLIN. MED. AND SURG., Aug., 1927, p. 585) may give it a tremendous impetus. It therefore behooves

every physician and, especially, every practitioner, immediately to set about acquiring its technic; to study the drugs available for use by this route, including glucose, magnesium sulphate, metaphen and a number of others, as well as those mentioned; to assure himself that his apparatus is of reliable quality and is *kept in perfect working order*; to procure his solutions, in ampules, from *thoroughly reliable manufacturers*; and last, but perhaps of first importance, to *study his patients* with the greatest care, in order to determine whether their cases are suitable for this form of treatment.

Being sure of his ability and judgment, of the reliability of his instruments and solutions and of the indications for the use of intravenous medication, the conscientious physician should proceed boldly and without hesitation to administer it. His success will be sure to educate other physicians and the community regarding its value.—ED.]

BREAST TUMORS

The Surgical Seminar Problem No. 6, June number, is one of greatest importance in my estimation. I think you will find that, if allowed to remain, those nodules will develop into a fatal carcinomatous condition. Now, if ever, the patient's life may be saved by the complete, radical extirpation of both breasts, axillary glands and lymphatics supplying these nodules.

I speak from 40 years' experience and have had several cases exactly such as that described. This history of the case should not influence any physician from diagnosing a dangerous condition, even though there may not be a particle of pain or tenderness on pressure. Almost invariably there is some tenderness on pressure, and while not a distinct pain, there is a slight twinge, an uneasy, uncomfortable feeling and, as the case develops, this increases in intensity.

Right here is the only hope and only possible opportunity for controlling cancer known at the present time. *Early diagnosis*, followed by *immediate* surgical interference. *Not* an enucleation, or partial operation, but a thorough *extirpation*.

Cancer is undoubtedly the greatest scourge to humanity. I have a patient for whom I prescribed the radical cure 10 years ago. She is cashier of one of our banks

today. Will it pay? If the case is in its incipiency, yes. If delayed diagnosis is made, every week's delay means increased danger and less favorable prognosis. If the people and physicians will wake up to these facts thousands upon thousands of lives can be saved.

Do not continue experimenting with anything, not even the electro-galvano-cautery nor radium. Up to the present day we have no substitute for thorough and complete extirpation by a trustworthy surgeon. All else is experimentation.

The chances for recovery lessen as the symptoms and disease develop. Delay means a greater percentage of deaths.

J. R. SMITH,

Warsaw, Mo.

[This article was received too late to be included in the Seminar discussion, but we were so glad to see Dr. Smith's strong warning of the danger of cancer that we publish it here.

In this particular case we believe the doctor is mistaken and we feel sure that, had he actually seen the case, he would have diagnosed it as one of chronic mastitis. The discussion in the August number covered the points rather fully.

In general, however, we believe that this attitude of regarding all breast tumors in women past 40 as malignant, until they are proved to be benign, is one which should be sedulously cultivated, by physicians and by the public, as well.—Ed.]

CEANOOTHYN AN ORAL REMEDY

An abstract, on page 638 of the August number of CLINICAL MEDICINE AND SURGERY, alluded, casually, to the subcutaneous administration of ceanothyn. It seems that this drug can not safely be injected. Local applications can be made, but its chief and important use is by oral administration.

AN UNEXPLAINED DEATH

I recently attended a woman in her ninth confinement and delivered a fine-looking, 9½-pound boy. The family history is good; the other eight children are living and well; labor lasted about two hours.

I visited the patients on the second and fourth day after delivery and found both mother and child in excellent condition. The baby was nursing moderately and sleeping

most of the time (except for slight colic, on the fourth night). His bowels and kidneys were acting normally, there was no infection at the navel and his color was good.

On the fifth morning, after the baby had been washed and dressed, he went to sleep, as usual. About an hour later the mother noticed that he looked pale, and examination showed that the child was dead.

What killed this baby?

M. B. STINE,

Des Moines, Ia.

[It would be interesting to know the weight of the covers over the baby and whether there was sufficient breathing space; whether the mother heard any disturbance, as of regurgitation and choking; the Wassermann reactions of the mother and father; and a number of other things. Without a more detailed history we can only guess at the trouble. But guesses may be suggestive and helpful, in a case like this.—Ed.]

ARTIFICIAL LEUKOCYTOSIS IN EYE INFECTIONS

I have read an article by Dr. Zorab, of London, England, on treating eye conditions such as severe ulcers of the cornea, trachoma, iridocyclitis, etc., by inducing artificial leukocytosis, as outlined by Dr. Burr Ferguson, of Birmingham, Ala.

After hearing Dr. Ferguson lecture to the members of the Calhoun County Medical Society, I became interested in his theory and method of treatment and began using his treatment in my private practice. I wish to give a brief report and history of a few cases that I have treated by Dr. Ferguson's method.

Case No. 1.—White man; age 31; carpenter. First seen July 10, 1927, with a virulent "serpent ulcer" of cornea of left eye. This patient was in such pain that I immediately injected 5 cc. of Lactigen, with the other usual treatment of atropine and hot applications. The condition was much improved in the next two days, when two infected teeth were discovered and removed, and one grain of salicylate of mercury was injected in the buttocks.

Five cc. of Lactigen and one grain of salicylate of mercury were given alternately every three days, and in sixteen days this man's eye was well. There is a scar

on the cornea from the ulcer, but I have never cured a case of this kind so quickly before.

Case No. 2.—Young white man, a carpenter, was struck on the cornea of left eye by a flying nail, causing abrasion of cornea, iritis, and severe purulent conjunctivitis. The usual treatment for such cases was instituted, including 20 percent argyrol solution every two hours for several days, until I injected 8 cc. of Lactigen, and in twenty-four hours the eye was well.

Case No. 3.—White man, machinist. Received foreign body in cornea while grinding tool on emery wheel. This was removed by the family doctor, who denuded quite an area of the cornea, making a large ulcer, which immediately became infected, with severe iritis, causing the anterior chamber to fill with pus. Every three days he received alternate injections of Lactigen and one grain of salicylate of mercury. He has also had two subconjunctival injections of cyanide of mercury. While he is still under treatment, the eye is clearing nicely and I believe he will get well. If this eye is saved, it will be the first one I have ever seen recover.

I have visited Dr. Ferguson's clinic, and have seen wonderful results by his method of treatment.

W. H. BRANNON,

Anniston, Ala.

OTHER LEUKOCYTE STIMULATORS

Since the publication of the article, "Artificial Leukocytosis in the Treatment of Gonorrhœa," in the June number of CLINICAL MEDICINE AND SURGERY, my attention has been drawn to a series of cases of this infection reported by Captain George B. Lake, M.C., in the *Medical Record*, April 17, 1915, while stationed in the Philippines. These cases were treated by the intramuscular injection of 1 to $1\frac{1}{4}$ grains of succinimide of mercury. The presence of the gonococcus was demonstrated in all cases before the injection of the succinimide, and in 75 percent of the series the findings were negative in from 2 to 6 days. These cases were seen in from three to seven months afterward and were still negative for the gonococcus. The remaining 25 percent of cases were among natives, some of whom failed to persist, or continued their habit of ineptitude or sexual excesses.

In the series of something over 400 cases treated in the Venereal Clinic here, in application of this same plan, results have been all of a kind with those reported by Dr. Lake, but save in a few cases have not been nearly so immediate. Lack of laboratory facilities has prevented accurate study of the time of the disappearance of the infecting organism here, so, in the main, clinical evidences of the behavior of the particular case have been the principal guide.

In the establishment the value of any therapeutic procedure, its ultimate proof lies in the observations of those who may be sufficiently impressed to apply the same plan. Without a knowledge of this remarkable series of Dr. Lake's, his plan of treatment was applied in the Clinic here, as reported in CLINICAL MEDICINE AND SURGERY, because mercurochrome, metaphen and arsphenamin stimulated the production of the white blood cells. Results of ten months application of the idea prove definitely that the plan of Dr. Lake is the only positive therapeutic procedure for the elimination of the gonococcus.

When this plan was begun, in September, 1926, the attendance of gonorrhœal patients was negligible. When it is known that in the last week there have been from 2 to 9 new cases a day, further proof of its value is shown.

Dr. Lenzman, of Berlin, using blood from a malarial donor and quinine by the mouth or intravenously in the treatment of the Niesserian infection, reports the same phenomena of relief as those reported by Dr. Lake and the writer through the use of various mercurial and arsenical preparations, each procedure having its definite demonstrable effect in the stimulation of the production of the white blood cells. Such proof would seem to establish beyond question that Metchnikoff settled the riddle of the ages when he stated, after twenty-five years of work, that the one constant element in immunity, whether innate or acquired, is phagocytosis.

BURR FERGUSON,
Birmingham, Ala.

THE CHILD'S BILL OF RIGHTS

The ideal to which we should strive is that there shall be no child in America that has not been born under proper conditions, that does not live in hygienic surroundings, that ever suffers from under-

nutrition, that does not have prompt and efficient medical attention and inspection, that does not receive primary instruction in the elements of hygiene and good health; that there shall be no child that has not the complete birthright of a sound mind in a sound body and the encouragement to express in fullest measure the spirit within which is the final endowment of every human being.

HERBERT HOOVER.

CHANGES IN INSTRUCTIONS RELATIVE TO ADMINISTRATION OF THE OFFICERS' RESERVE CORPS

The Secretary of War has directed issuance of instructions for a number of changes in the administration of the Officers' Reserve Corps, exclusive of federally recognized National Guard Officers. The effect of these changes will be as follows:

1.—Whereas formerly promotion to fill vacancies was dependent upon a Certificate of capacity, which was obtained only by conformity to a prescribed standard, the forthcoming regulations will permit substitution of 300 hours' work in the preceding five years. Fifteen days' training will be counted as 100 hours of such work.

2.—Time required in each grade prior to promotion will be as follows:

As a 2nd Lieutenant.....	3 years
As a 1st Lieutenant.....	4 years
As a Captain.....	5 years
As a Major.....	6 years
As a Lieut. Colonel.....	7 years
<hr/>	
Total.....	25 years

3.—For promotion above the grade of Major, in the cases of those who were not officers in the World War, qualifications must be shown either by graduation from the General Service Schools or by passing of special examinations.

4.—When vacancies exist and the Secretary of War authorizes promotion to the grade of Brigadier General in the Officers' Reserve Corps, selection will be limited to the eligible list of Colonels who have demonstrated their qualification by examinations and practical tests.

5.—Whereas in the past in some cases assignment to units has been made of officers living outside the geographical areas of such units, hereafter promotion

will be made to such vacancies from officers within the unit area.

6.—More responsibility for administration of the Officers' Reserve Corps will be placed upon Reserve officers by provision for a board of Reserve officers, acting on an inactive status, in each Corps Area. These boards will advise on cases of separation and reappointment of Reserve officers, and also will advise Corps Area Commanders with reference to other questions pertaining to the Organized Reserves and the Officers' Reserve Corps.

7.—The Unassigned Section of the Officers' Reserve Corps will be discontinued. In lieu thereof, the privilege of assignment, and active-duty training will be accorded only to those officers who, during the five-year period of an appointment, have obtained a certificate of capacity, performed 200 hours military work, completed a correspondence school course, or obtained the necessary certification from their Chief of Branch.

8.—Regardless of their eligibility for assignment and active-duty training, all field officers may be re-appointed in the same grade and branch. Captains and Lieutenants, however, having received one re-appointment during which they were ineligible for assignment and active-duty training, and not having maintained the required standards of work during this second appointment will be given a third appointment only upon recommendation of a board of Reserve officers convened in their Corps Area.

9.—The Executive for Reserve Affairs will serve under the Assistant Secretary of War (Colonel Hanford MacNider), to whom the Secretary of War has delegated supervision of the administration of the Officers' Reserve Corps and Organized Reserves.

WAR DEPARTMENT,
Washington, D. C.

STATE HOSPITALS AND INCOME TAXES

The compensation received by a medical director of a state or county hospital is no longer exempt from income taxes, under a ruling just announced by the Income Tax Department.

Heretofore the law used to be that a medical director in the position mentioned need not pay any income taxes on his com-

pensation since he was a state employee or the employee of a subdivision of a state, and the salaries of such employees were exempt from tax. Under the 1926 law, the further requirement was added that the employment be in connection with an essential governmental function. It is now held by the Income Tax Department that operating a hospital is a proprietary rather than a governmental function, and hence the Department concludes that the compensation of a medical director is subject to tax under the present law.

The probabilities are that this ruling will be contested, for there is a serious doubt whether conducting a hospital is purely proprietary. The contention may be made that the state wishes to safeguard life as well as property, and maintaining a public hospital could therefore be regarded as an essential governmental function.

M. L. SEIDMAN,
(Tax Expert of Seidman & Seidman, Certified Public Accountants)
New York, N. Y.

[This is a matter of considerable importance to physicians who are employed by state and country hospitals and looks, at first sight, as though it were a ruling made without a full consideration of the facts. If those who are interested will take this up with their Congressmen and Senators and make formal protest (stating their reasons) to the Income Tax Department, it may be possible to have the ruling changed.—Ed.]

SUGGESTIONS FOR PHYSICIANS WHO DISPENSE THEIR OWN MEDICINES

To clean bottles, use scrap filter paper and about eight ounces of sodium bicarbonate with some water. Shake the bottle violently about one minute, then empty the bottle and wash out with water.

To clean tincture or fluid extract bottles from botanical extractions, use a solution of lye—one can of Babbitt's lye to a gallon of water.

To clean chemical and chemical solution bottle, use technical muriatic acid.

To clean lime water bottles, use muriatic acid.

To clean oil bottles, use a mixture of about 250 cc. ammonia water and 10 cc. oleic acid. Shake the bottle well and let stand until the next bottle arrives. Trans-

fer it to the new bottle and follow the same procedure.

To remove odors from mortars and pestles, use a small amount of denatured alcohol and burn, turning the pestle around the mortar. Let cool and wash with soap and water.

To remove odors from bottles, use either one dram of potassium permanganate in about one pint of water or technical iron sulphate, about two ounces, and one dram technical sulphuric acid in about one quart of water. Let stand about twenty-four hours, then wash with water.

To remove odors from hands, use ground flaxseed. Work it well between the fingers.

To clean greasy mortars and ointment slabs, use sawdust, then soap and water.

To remove iodine or tincture iodine from the hands, use ammonia water.

To remove silver nitrate, use a saturated solution of potassium iodide.

To remove potassium permanganate stains, use a solution of oxalic acid.

When using an oil graduate, place a piece of paper inside to distinguish it from the others. Clean with sawdust.—*Merck's Report*.

TEACH TRUTH BY EXAMPLE

There is no better, more logical, nor surer way of developing the habit of truth in the child than by permitting him to live in an environment where he may have truth as an example to imitate. Moralizing in an abstract way about the beauty and value of truth has but little effect in establishing the habit of truthfulness during the early years of childhood. Parents should avoid letting a child develop the habit of lying merely because it is easier for them to avoid the issue than to meet it squarely. The lying of children is not infrequently the imitation of the same practice by other members of the family who themselves are inclined to meet every issue in life either by self-deception or by deception of others. The ever-useful headache, saying that one is out when an undesirable neighbor calls, lack of frankness between the parents in simple household matters, and warnings to the children of "Don't tell your father" or "Don't tell your mother" tend to give the child an idea that evading the truth is perhaps a very useful bit of technic in dodging new, untried, and difficult situations.

It is not difficult to teach most children that telling the truth is worthy of effort, inasmuch as it brings them the approbation of those with whom they have to live and adds to their material pleasure. This may be accomplished by giving them an environment of truth-telling and by demonstrating to them that lying will invariably work out to their disadvantage.

D. A. THOM, M.D.,
Boston, Mass.

SMALL-POX, OBSTETRICS AND PROFESSIONAL NAVIGATION

On page 565, July number of CLINICAL MEDICINE AND SURGERY, is a cut of confluent smallpox (fatal) which brings vividly to my mind an epidemic that we had in Benton County, Mo., 25 years ago. I was County Health Officer at that time and saw many cases, a number of the hemorrhagic confluent form, but fortunately no deaths.

The case in mind that compared closely in appearance with the cut on page 565, was a Mrs. K., who was nearly at full term of pregnancy. At the height of inflammation and eruption, I was called about 10 P.M. to attend her in completing delivery. Just imagine yourself, brother Doctors, attending a case of confinement in a two-room shack with five other cases of smallpox in the same room and your patient with a temperature of 105°F.; flighty at times; pulse 175; respiration, as near as I remember, 35 or more; and features and body distorted with pustular eruptions to such a degree that identification of the person would be difficult.

The room was not a sanitary one for confinement, by a long way. My first thought was two death certificates to be made out; but about two hours after my arrival a 10-pound baby girl was delivered, apparently in perfect health and development, except for some 8 or 10 fully developed smallpox pustules on the face and body.

The placenta was adherent to the superior and anterior left half of the uterus, covering the left horn. After a reasonable amount of time and kneading from the outside, I found it was necessary to go in after it, which I did, after thoroughly scalding my right hand and arm to above the elbow with iodine and boiling water. I entered the uterus by forming a cone-

shaped dilator of my fingers and hand (as contraction of the neck of the uterus had taken place). I eventually loosened the placenta and removed it complete.

Imagine my surprise the next morning to find remarkable improvement; temperature 101°F.; pulse 90; respiration nearly normal; and the patient resting easily. Eventually both mother and child made an uneventful recovery and are both living at this writing. Pockmarked? Branded for life! But happy and healthy and both have borne children since that time.

So we see that Col. Lindbergh does not have all the thrilling experiences of life. We all have sailed through the "Valley of the Shadow of Death," hundreds of times, alone and with hardly a compass to guide our way and often with "little gas left," when our experiences have been completed, and with very little praise and often less money; and yet, we were following the chart that was laid down for us when we received the degree of M.D.

JOHN R. SMITH,
Warsaw, Mo.

LYMPHATIC LEUKEMIA IN A CHILD (A Case Report)

Baby, H. J., age 3 years, female.

Family history: Mother and father, brother and sister, all living and well.

Previous health: No sickness; birth normal at full term; always well.

Present complaint: Well developed, well nourished girl, 3 years old, brought to office by mother. She is bleeding profusely from both eyes.

History of present complaint: Has been in country for 2 weeks. Six days ago complained of sore left knee and eyes were sore. Taken to a doctor who prescribed argyrol, 5-percent to drop into the eyes, for "pink eye."

Examination: Complete negative physical examination, except that blood is "sweating" from entire conjunctival surface of both eyes and the sclerae of both eyes are completely hemorrhagic. The blood is running out of both eyes rapidly. On evertting the lid margins there is no sign of trauma or disease except that blood is oozing rapidly from the conjunctiva. No petechiae of skin; no enlarged glands; spleen not palpable; no enlarged joints.

Gave $\frac{1}{2}$ cc. fibrogen, hypodermically, and applied it locally to both conjunctivae.

Bleeding stopped entirely in 10 minutes. Put child to bed.

Next day: No bleeding. From this time on, subscleral hemorrhage disappeared under applications of heat.

Ten days later she complained of not feeling well; eyelids were edematous, upper lids swollen so as to protrude over margins of the lower lids, completely closing the eyes. Temperature normal; pulse normal; sclerae clear; serum oozing from both eyes but no red blood. The serum coming from the eyes is straw colored.

Next day: Same eye picture. Face swollen in general. Applied heat. After 3 days the swelling all receded. Baby looks pale and the submaxillary gland (salivary), on left side, is enlarged to half the size of a hen's egg. *Blood examination* shows: Hemoglobin, 30 percent (Sahli); red blood cells, 2,000,000; white cells, 16,000; differential, 100 percent lymphocytes of immature type—no other type of cell seen.

Four days later: Swelling in neck receding; face and eyes normal; skin pale and waxy. No petechiae.

One week later: Thoracic external lymph nodes palpable; epitrochlears size of "BB" shot; inguinal hard and enlarged; spleen not palpable. Gums hard, no bleeding; throat normal or slightly red; petechiae of pin-point size on arms.

Blood examination: Hemoglobin, 30 percent (Sahli); red cells, 1,700,000; white cells, 16,000; differential, 99 percent lymphocytes.

Three days later: Sent to large charity clinic with a diagnosis of *acute lymphatic*

leukemia. On entrance she was given 250 cc. of whole blood, intravenously, from the mother. (Both are Group 4.)

Next day: Hemoglobin, 48 percent; color better.

Next day: Hemoglobin, 58 percent; red blood cells, 2,820,000; white cells, 6,200.

At the end of a month the child had received three transfusions and was discharged as well, with a final diagnosis of "streptococcic sore throat with an acute, hypoplastic anemia, secondary to infection."

Next day the child was brought to my office. Examination shows child apparently normal. Blood examination: Hemoglobin, 30 percent (Sahli); red cells, 2,000,000; differential: lymphocytes, 59 percent; large mononuclear cells, 35 percent; eosinophils 1; basophils 4; transitorials 1. *Diagnosis*, still *acute lymphatic leukemia*.

Three weeks later: Petechiae all over body; child pale and waxy. Sent back to hospital where she died 5 days later.

Autopsy: All lymph nodes slightly enlarged; spleen twice normal size; blood cells, 90 percent lymphocytes; subcutaneous hemorrhages scattered all over the body.

Pathologic diagnosis: Acute lymphatic leukemia.

Length of life: Two days less than 4 months from first symptom to death.

First symptom: Conjunctival hemorrhage only.

This case is very interesting, due to the unusual type of onset.

J. R. STURR,
Minneapolis, Minn.

The Leisure Hour

Conducted by GEORGE H. CANDLER, M.D.

A Nineteenth Amendment

ALTHOUGH seemingly spoken in jest, Edna Ferber's prophesy at Yale University to the effect that a Nineteenth Amendment restricting food consumption will yet be added to the Constitution is not to be lightly dismissed. This would doubtless carry a "Volstead" Act along with it aimed against overfeeding. The justification for this sort of thing could be argued quite convincingly. Of course, like all prohibitions, it would be meant to apply only to "the other fellow."

Under such an amendment, said Miss Ferber, it would be illegal for food to be mentioned in literature; at least it could not be glowingly described; the Christmas puddings, tripe pies, and mugs of liquid refreshment that a Dickens gives to his men and women would be proscribed. Miss Ferber's particular fear is for her own creations, since she has been a good "provider," and has always fed her characters rather lavishly; naturally, she feels that her literary future is at stake and that the prohibitory censorship will reduce her royalties to the vanishing point.

The drama would be seriously hampered under the new prohibitory régime. Actors would not be permitted to use suggestive language calculated to inflame the appetites of their auditors, and no dining scenes would be tolerated. "We may consistently expect to see the Food Prohibition Enforcement Squad descend upon the theatre where a play is being given, and, when the heroine in the second act drops three lumps of sugar in the hero's tea, shout 'Padlock this place! The new amendment against too much sugar has been violated!'"

All advertisements exploiting obscenely the gastronomic luxuries would be suppressed.

Not more than one pint of the popular syrups or one pound of sugar itself could

be prescribed within the space of ten days for a convalescent patient. Candy would be contraband. Soda fountains would be abolished. Restaurants and hotels would be obliged to calculate caloric requirements and patrons' food cards punched accordingly.

Two important evils have already been nearly eliminated—sex and alcohol. And now those who overfeed grossly, like the old time drunkards, are about to bring upon us another deluge.

So wags the modern world away.

Editorial in *Med. Times*.

THE NEWS WE GET

Scene: City news room of *The Evening Blah*, "A Paper That Should Be Read in Every American Home."

Time: Just before deadline for the home edition.

Characters: A city editor and his staff.

City Editor: !?-!* / (Ten minutes to deadline and not a good story in the paper!

1st Reporter: Here's a composite interview with the presidents of six big universities . . .

City Ed.: Don't want it! Nobody'll read that academic applesauce!

2nd Reporter: I've a pretty fair yarn about a discovery of some serums that will cure thousands of . . .

City Ed.: Throw it away! We can't use junk like that!

3rd Reporter: Say, chief, I can give you a little squib about an old man who's devoted his life to helping the poor people in his neighborhood . . .

City Ed.: Haven't any room for it. Sounds like some kind of publicity stunt, anyway.

4th Reporter: Want a couple of short paragraphs about the new art gallery and

music hall the city's going to open today?

City Ed.: No! That isn't news. Don't waste your time writing it!

5th Reporter: Here's something about that old scientist who's just spent twenty years studying. . .

City Ed.: Not a line! He's probably looking for some free advertising for a lecture course or book. What's the matter with this place? Can't we ever get any news in this sheet anymore? (Interrupted by telephone. Grabs receiver and shouts: Talk fast! Say something!)

Police Reporter (over 'phone): Just got a hot tip. Baby's body. . . head smashed in with an axe; found in garbage can. . . I'll call in again in three minutes with the whole story!

City Ed.: (Kicking over desk and throwing enthusiastic fit): Here's a whale of a story! . . . Smith, Jones, Brown! Grab taxis; chase down to the Central Station and hop right on this! Hire a couple of planes and special trains if you need 'em! . . . Wilson, tell the art department to rush a three-column, snappy picture of some bathing girls looking into a garbage can! Tell 'em to get the one with the best legs in front this time! . . . Black: fake half a column interview with some great criminologist on axe murders. . . Play up the "perfect crime" stuff. . . Murphy: tell the make-up editor there's a big yarn coming and to yank everything out of the first page but the heading and weather forecast! . . . Hey, kid: run through the morgue and drag out all the pictures and dope we have on baby killings and garbage can mysteries! . . . Miss Mush: jump on the 'phone and get half a dozen sob interviews with prominent clubwomen on "How I Would Feel If My Baby's Battered Body was Found in a Garbage Can" . . . Hello! Hello! . . . What's the matter with this 'phone? . . . Gimme the circulation manager. . . Hello, Bill . . . Have an extra ready for you in seven minutes. . . Biggest story of the year just busted. . .

By Chet Johnson, in *Editor & Publisher*.

A "CATCHING" DISEASE

Patient (calling on family doctor)—"Doctor, my son has scarlet fever, and the worst part about it is that he admits he got it from kissing the housemaid."

Doctor (soothingly)—"Young people will do thoughtless things."

Patient—"But don't you see, doctor, to be plain with you, I've kissed the girl myself."

Doctor—"By jove, that's too bad."

Patient—"And to make matters worse, as I kissed my wife every morning and night, I'm afraid she will catch it."

Doctor (wildly)—"Good heavens! Then I will have it, too!"—*Medical Pickwick*.

She was a careless girl to put the subscriber on the wrong number. Being in a hurry, the subscriber promptly asked for a box for two.

"But we don't have boxes for two," said a startled voice at the other end of the line.

"Why, isn't this the theatre?" he inquired.

"No," was the reply, "This is——'s, the undertaker."—*Medical Pickwick*.

LIBERTY

"My good man," said the temperance worker, "What makes your nose so red?"

"Why, Madame," was the reply, "it's blushing with pride because it knows how to mind its own business."

ORDERS IS ORDERS

A rookie sentry at Fort Snelling was walking a post that terminated at the bank of the Mississippi river. Two young second "looies" strolled to the water's edge and began to strip for a swim. The sentry stood watching them until one, having undressed, advanced to the water.

"Halt!" cried the sentry. "You can't swim here!"

"Then why didn't you tell us before we got our clothes off?" snapped a "looie."

"My orders don't say nothin' about undressing," replied the sentry, saluting.—*The Trouble Shooter*.

Diagnostic Pointers

COMPLETE PHYSICAL EXAMINATIONS

After a physician has examined a patient, it is decidedly embarrassing to have him ask some question about his condition which the doctor cannot answer because he has overlooked some points in the examination.

A complete physical examination enables the medical attendant to answer any question the patient may ask and makes an excellent impression which enables the doctor to keep command of the case.—DR. GROVES B. SMITH, Detroit, Mich., at the A.M.A. Meeting.

HEMATURIA FOLLOWING INJURY

Hematuria following an injury demands a prompt and thorough examination to determine exactly what damage has been done to the bladder or kidneys.—*Urol. & Cutan. Rev.*

ACUTE NEPHRITIS

The presence of red blood cells in the urine is a prime symptom of acute nephritis. These may disappear for a time but relapses are common. Fats (lipoids) also appear in the urine.

Acute nephritis is not confined to the kidneys. Other organs also suffer parenchymatous degeneration, as in focal infections and toxemias.—DR. S. S. BERGER, of Cleveland, O.

DIAGNOSING PARESIS

As a rule a man's judgment improves between 40 and 60 years of age. If, during this period, a man's judgment becomes poor, particularly if this change is accompanied by an increase in his courage and self-confidence, beginning paresis should be suspected.—DR. W. A. EVANS, of Chicago.

ROUTINE X-RAY EXAMINATIONS

The value of routine roentgenologic examinations was recently demonstrated by a patient who came complaining of precordial pain which had persisted for some time and had not been relieved by treatment.

A roentgenogram of the body showed marked destruction of the eighth vertebra, which may be tuberculous or malignant. In

either case we have a basis for treatment which was not furnished by the referred pain in the precordium.—DR. WM. H. MERCUR, Pittsburgh, Pa.

LOW BLOOD PRESSURE

A systolic pressure of 110 mm. or lower, in an adult, should be considered hypotension; anything below 105 mm. calls for treatment; and a systolic pressure of 100 mm. or lower, in an adult, demands rest from all active duties.—DR. OSBORNE (quoted by Johnson, in *Southern M. & S.*, Jan. 1927).

POSTPUERPERAL NEUROSES

The beginning of dementia precox not infrequently follows pregnancy, so do not give too rosy a prognosis in the early stages of what appears to be a postpuerperal neurosis.—DR. C. W. STONE, of Cleveland, O.

ALCOHOLIC PSYCHOSES

Acute alcoholic hallucinosis follows repeated alcoholic episodes and is characterized by auditory and visual hallucinations which clear up slowly. About 5 percent of these cases become chronic (alcoholic dementia).

Alcoholic paranoia is the worst type of this class of cases. The milder cases do well under the protection of a hospital, but they "blow up" under the pressures and strains of normal life.—DR. K. S. WEST, of Cleveland, O.

HEMORRHOIDS AND MITRAL INCOMPETENCE

Hemorrhoids are common in patients with mitral insufficiency, because of interference with the suction action of the heart.—DR. MEL R. WAGGONER, Cedar Rapids, Ia.

DIAGNOSING SYPHILIS

Search for syphilis in all chronic diseases of the joints; in gastric ulcer (10 to 12 percent are of syphilitic origin); in "neurasthenia"; and in any chronic conditions not yielding to ordinary treatment.

Every clinical examination should include a Wassermann test, as regularly as

tests of the urine, heart and lungs. Study of the spinal fluid should not be neglected.

Inadequate treatment of syphilis frequently results in disappearance of symptoms, with subsequent infection of the wife or husband or disastrous effects upon the patient.—DR. HUGO HECHT, in *Deutsche med. Wochenschr.*, Nov. 12, 1926.

FITS AND FAINTS

Sudden loss of consciousness may be of cerebral ("fits"—epilepsy) or of circulatory origin (fainting). Certain severe fainting spells may be attended by convulsive movements. These cases must be studied carefully.

Under the heading of fits or epilepsy of unknown origin, we may have the major seizures, petit mal or vaso-vagal crises.

Under circulatory disorders we find:

1.—Vascular Disturbances.

A.—Fainting and faintness.

2.—Cardiac Disturbances (with fainting and convulsions).

A.—Tachycardia.

a.—Paroxysmal attacks.

b.—Auricular flutter.

B.—Bradycardia.

a.—Heart-block.

DR. G. A. SUTHERLAND,
In *The Lancet*, June 11, 1927.

ARSPHENAMINE IDIOSYNCRASY
When a patient gives a history of urticaria, pruritus, eczema, erythematous rashes, hay-fever and asthma, he is liable to be hypersusceptible to the arsphenamines. Dosage in these cases should be small and very cautiously increased.—*Clinical Excerpts.*

DIAGNOSIS OF NASAL SINUSITIS

1.—The word "catarrh" has no significance apart from sinus infections.

2.—Recurring headaches and persistent yellowish or greenish post-nasal discharge are pathognomonic of sinus disease.

3.—Sinus disease is generally but not always associated with nasal obstruction and polypi.

4.—The essentials of diagnosis are: A careful history; a thorough physical examination, including transillumination, irrigation and aspiration with a suction apparatus; and a careful x-ray study. Recognition of sinus disease by these methods is

not difficult and fewer cases should be missed.

5.—Acute sinus infections will generally recover under comparatively simple treatment: chronic cases are difficult to handle, but many can be cured by well-directed and adequate surgery and prolonged treatment.

—DR. IRVING W. VOORHEES, in *Fraser's Notes*.

MALARIAL TREATMENT OF NEUROSYPHILIS

Serologic improvement, following the treatment of neurosyphilis with malaria, does not appear for from 1 to 3 years after the treatment is given.—DR. PAUL A. O'LEARY, Rochester, Minnesota.

NEUROSYPHILIS IN WOMEN

Women are much less likely to develop clinical symptoms of neurosyphilis than are men. If pregnancy follows the syphilitic infection it seems to protect them, in some way, against involvement of the nervous system.—DR. J. E. MOORE, Cleveland, Ohio.

GASTRIC FUNCTIONS UNDER ATROPINE AND ALCOHOL

While full doses of atropine relax the pyloric sphincter, recent researches have shown that the accompanying decrease in gastric secretion is not accompanied by definite change in gastric motility. The addition of 50 cc. of a 7-percent solution of alcohol to full pharmaceutical dosage of atropine induced gastric secretion, antidoting the influence of the atropine.—Editorial in *Therap. Gaz.*, Jan., 1927.

HERPES PROGENITALIS

Herpes progenitalis that does not respond to continued cleanliness should lead one to suspect that it is caused by reflex irritation from a lesion in the urethra.—*Urol. & Cutan. Rev.*

SANITY AND MORALS

Psychiatry is not a branch of morals, and mental disease is no more a punishment for immorality than sanity is a reward for saintliness. Indeed, a study of the lives of the saints is much more of an excursion into psychiatry than is a study of the lives of the great sinners.—DR. ABRAHAM MYERSON, in "The Psychology of Mental Disorders."

Current Medical Literature

SYMPOSIUM ON TOBACCO-SMOKING

The Practitioner, for Jan., 1927, publishes three important contributions to the tobacco-smoking question; viz., the effects on the digestive system, by Sir Humphrey Rolleston; the effects from the nervous and mental aspect, by Sir Robert Armstrong-Jones; and the physiologic effects, by Professor W. E. Dixon, examiner in pharmacology to the Universities of Oxford and Cambridge.

Rolleston says that although peristalsis of the body of the stomach is inhibited, the pylorus may be spasmically contracted by excessive smoking, especially of cigars, and so hyperchlorhydria results, with symptoms simulating duodenal ulcer. He says further that the relation of tobacco-smoking to squamous-celled carcinoma of the lip is only indirect; that smoking does not favor dental caries; and that the effect of smoking in staving off hunger is probably due to the action of nicotine in inhibiting stomach movements.

Armstrong-Jones' article is largely historical. From the health point of view he prefers the cigarette to the pipe, even allowing for the greater inhalation. Tobacco-smoking in moderation is not injurious to grown-up people; indeed, on the contrary, it exercises a soothing influence when the nervous system is irritable. Tobacco in any form is injurious to growing youth and in them is not infrequently associated with the craving for alcohol. Excessive cigarette smoking is, according to the author, rather an indication of weak-mindedness and weak will-power in youth than a cause and should not be connected with any tendency to criminality. On the whole he favors the use of tobacco in moderation by adults, especially for its psychologic effects.

Professor Dixon's article is clearly favorable to the use of tobacco, in moderation of course. The blood pressure of the seasoned smoker is scarcely altered by smoking and his tolerance may be almost complete; strictly speaking smoking does not lead to addiction comparable with narcotics; the loss of one's smoke is an annoyance but not a tragedy, and there are but few who cannot, when the necessity arises, dispense with tobacco.

Dixon in concluding says: "The modern conditions under which we live, imposed by residence in cities and sedentary occupations, have produced a race of neurotics—supersensitive people whose worries become tragedies—and it is to these in particular that tobacco is a solace. In America, where the strenuousness of city life is more exag-

gerated than with us, a plethora of true drug addicts has resulted; happily this phase of civilization is almost unknown in England. The ordinary man under the strained conditions of modern existence finds that tobacco produces a soothing, beneficial and relatively harmless effect."

HEADACHE

Sinusitis is one of the near and frequent causes for headache, according to Dr. John W. Shuman, of Los Angeles, in *M. J. & Record*, April 6, 1927. Ethmoiditis and sphenoiditis often give rise to migraine—that bugaboo of medicine.

This type of patient is too often given "migraine tablets No. 1 or No. 2," or both, for years, until some doctor with imagination, skill and x-ray facilities makes a correct diagnosis and eradicates the focus of infection by the same treatment.

THE THERAPY OF PELLAGRA

A study of the treatment of pellagra, such as that given by Dr. Geo. M. Niles, in *M. J. & Record*, April 20, 1927, based upon actual observation and treatment of over two thousand pellagrins and extending over a period of about sixteen years, should be of great interest and value.

Dr. Niles divides the general treatment into dietetic, hygienic, medicinal and climatic.

Regarding diet, it should be easily assimilable and highly nutritious, and pellagrins seem to bear the flesh proteins very well; but when the buccal mucous membrane is inflamed the meats should be ground up or scraped. When any important article of diet is prohibited care should be taken that some other food of equal caloric value is substituted for it.

In no other chronic or exhausting disease is there a greater necessity for hygienic habits than in pellagra. Rest is of paramount importance. Dr. Niles thinks that the importance of obtaining a hygienic state of the mouth has been underestimated and recommends a $\frac{1}{2}$ grain injection of emetine each day for six days. After two weeks this should be repeated; and, if the mouth remains sore or unclean, the "six day treatment" with emetine may be repeated four or five times.

Dr. Niles strongly favors medicinal remedies in pellagra and thinks that because a positive specific has not yet been found there is no reason for therapeutic pessimism. Silver nitrate, boroglycerin, aromatic sulphuric acid and atropine are

all used in various mouth conditions; iron arsenite solutions and sodium cacodylate are employed hypodermically as constitutional remedies as well as the internal use of a combination of Fowler's solution and a saturated solution of potassium iodide.

For the treatment of diarrhea, bismuth betanaphthol and resorcin generally suffice; but if not tannigen, protan, or heavy doses of bismuth subgallate may be employed; for anorexia, tincture of nux vomica or similar drugs can be used. Drastic cathartics must be avoided in constipated cases; phenolphthalein in 1 or 2 grain doses at night should be satisfactory.

Empirin or phenacetin are useful for headaches and different neuralgias.

In regard to the erythema, when other applications to sore and crusted skin fail, Niles recommends the scarlet-red ointment which is quite efficacious.

No formal rules of treatment can be laid down for the mental symptoms. Sleeplessness may be combatted by the usual hypnotics, and the addition of acetphenetidin to barbital augments its good effects and prevents disagreeable after effects.

MIDWIFERY IN THE HOME

Dr. Ernest Kaye Le Fleming, of Dorset, England, in an article in *M. J. & Record*, October 6, 1926, thinks, after an experience of twenty-five years in town and country practice, that there is a steady advance in the treatment of maternity cases. The quickening of means of communication, by telephone and automobile, brings the doctor nearer to his patient. The general standard of cleanliness in the home has advanced and with it facilities for obtaining the necessary supply of clean water, linen, etc. The handy woman is steadily being replaced by the trained midwife. Nursing associations are springing up everywhere. A complicated case is recognized earlier and more easily dealt with. Hospital accommodation for special cases is increasing, with the necessary transport arrangements.

ANALGESIC EFFECT OF ALKALINIZATION OF THE TISSUES

The previous researches of several authors have shown the importance of the part played by hydrogen ions in the production of inflammatory pains, and the work of W. von Gaza and Brandi, as described in *Klin. Wchnschr.*, June 18, 1926, fully confirms this.

By injecting alkaline solutions into the cavity of an abscess (from which pus has or has not been aspirated), pain can be made to disappear during 10 to 20 hours. Compresses, wet with alkaline solution and applied over the surface of a wound, diminish pain for about 3 hours. These alkaline solutions (tampon salts) contain acid sodium phosphate, to which a sufficient amount of sodium chloride has been added to render the solution isotonic; i.e., 6.49

Gm. of Na₂HPO₄ and 6.44 Gm. of NaCl, which give pH=9.1.

In cases of furunculosis, the solution was injected, as far as possible, after evacuation of pus.

The anesthetic effects and sometimes even curative effects (absence of all suppuration) have been remarkable. In cases of radiologic ulcers, both irrigations and compresses of the alkaline solution, equally cause disappearance of pain.

Pruritus, which is the symptom of recovery from local inflammation, ought be considered as resulting from a modification of the pH. Alkaline solutions, either injected or as compresses, have given good results in intense pruritus.

ARSENIC FOR DEAFNESS

Dr. E. Wodak in *Deut. med. Wchnschr.*, March 26, 1926, claims that arsenic in large doses is a valuable remedy for deafness. Sodium arsenite is given by the mouth—from 30 to 50 mg. ($\frac{1}{2}$ to $\frac{5}{6}$ grain) daily in pill form. When tolerated, the treatment was kept up until between 200 and 300 mg. (about 3 to 5 grains) had been taken, after which the patient is allowed to rest.

Wodak has treated 166 subjects with all forms of deafness. While all these forms of deafness have been benefited, about one-third of the patients failed to obtain any relief.

TRUSTING THE PATIENT'S HISTORY TOO MUCH FOR DIAGNOSIS

In the *M. J. & Record*, of October 6, 1926, Dr. Henry J. John of Cleveland, O., gives the clinical course of two cases to show how misleading a history of the patient's symptoms may be and how easily a mistaken diagnosis might be made or a serious complication overlooked if sufficient objective evidence of the true status of the patient is not obtained. In the first case there was a history of typical diabetic symptoms, but a glucose tolerance test showed that the patient did not have diabetes; in fact, the carbohydrate tolerance was above normal. In the second case there was no history of diabetic symptoms yet a definite diabetic condition was found to be present. This patient's objective symptoms were those of severe hyperthyroidism; and, although there was glycosuria, the presence of a severe diabetes might have been entirely overlooked if a glucose tolerance test had not been made.

ATYPICAL ANGINA PECTORIS

None of the numerous theories regarding the etiology of angina pectoris is entirely satisfactory. Dr. Joseph Barsky, of New York, writing on this subject in *M. J. & Record*, October 6, 1926, is of the opinion that the existing or determining factor may

be a protein poison from food, which may gain entrance into the circulation and act as an irritant to the aortic plexus; or it may happen that a member of the guanidin group may act by unduly raising the blood pressure in the aorta. The same effect could be induced by bacterial toxins circulating in the blood, acting as irritants to the nerves and bringing on an attack. In the presence of some definite pathologic lesion a physical or emotional factor may be an exciting agent, or exercise may cause an attack.

The angina of rest is, Barsky thinks, more violent and fearful than the angina of effort, because in the latter the exciting cause is usually under the control of the patient, while the angina of rest is more usually due to a poison or toxin in the blood or to the retention of some substance ordinarily eliminated by the kidneys. Several illustrative histories are cited.

FEVERS

In an article on fevers in *M. J. & Record*, October 6, 1926, Dr. Geo. S. Bel calls attention to the fact that the determination of the etiology of long-continued fevers produced by microorganisms and their poisons is often of paramount importance from the viewpoint of possible chemotherapy, serotherapy and vaccinotherapy; for example, in streptococcus septicemia, vaccines or antitoxins are indicated (vaccines and serotherapy). In malaria, the detection of the parasite in the circulation calls for the administration of quinine (chemotherapy); in meningococcal meningitis, the determination of the cause permits the prompt administration of antitoxin (serotherapy).

ULTRAVIOLET AND SKIN DISEASES

Artificial sunlight, as an adjunct to other tried methods, has assumed a high place in the treatment of skin diseases, in the opinion of Dr. W. F. Castle, writing in *The Practitioner* for October, 1926.

The ultraviolet rays have two main actions: antiseptic effects and general stimulation of metabolism. The former effect is the same, whatever the age of the patient; but the general stimulation varies inversely as the age. Children show very marked physical and mental improvement under its use.

Great care must be taken with asthmatic patients, in whom a small dose of the rays may produce an intense erythema.

Ultraviolet irradiations have proved decidedly beneficial in the following conditions:

1.—*Sycosis*: Prolonged treatment is required to prevent relapses.

2.—*Impetigo*: Combine the raying with other local treatment. Infected children may be treated along with others, as the antiseptic action of the rays prevents the spread of infection.

3.—*Carbuncles*: If seen early enough, carbuncles, as well as boils, will clear up without breaking down. If already open, the use of the rays will hasten healing; and it produces the same result in other septic wounds and in *varicose ulcers*.

Psoriasis, seborrhea, tuberculids of the skin and acne are decidedly benefited by the rays. In treating acne, every third or fourth treatment should be sufficiently strong to cause exfoliation of the skin of the affected part.

Scar tissue and x-ray dermatitis cannot be restored to normal by this method, but small, frequent doses are sometimes helpful.

BILATERAL LIGATION OF VAS DEFERENS IN PROSTATECTOMY

Epididymitis is a frequent complication of prostatectomy by any method.

Dr. Albert E. Goldstein, of the Sinai Hospital, Baltimore, Md., in the *J. Urology*, January, 1927, presents a study of 50 prostatectomies with a view of determining the value of ligation of the vas deferens in obviating the complication of epididymitis. Sixteen of the operations were one-stage suprapubic; 16 were two-stage suprapubic; and 18 were one-stage perineal. In 25 of the 50 cases a bilateral ligation and section of the vas deferens was done. In these 25 case a questionable complicated epididymitis of a very mild degree occurred in one case, or 4 percent. In the 25 cases that received no ligation epididymitis occurred in 5 cases, or 20 percent. Goldstein therefore concludes that, irrespective of the type of prostate dealt with or the method of its removal, bilateral ligation and partial resection of the vas deferens reduces the complication of epididymitis to a minimum.

The ligation and section should be done early—even before prostatectomy—to avoid an epididymitis from frequent catheterization. The operation should be performed in the scrotum. A section of 0.5 to 1 cm. of the vas should always be removed to avoid anastomosis. The ligation has no effect on the sexual powers.

TREATMENT OF DRUG ADDICTION

A tested system of treatment for narcotic addiction, not only free from pain, but in the majority of cases without an hour of uneasiness, is claimed by Dr. G. Laughton-Scott and described in the *Practitioner* for Jan., 1927. The method is a modification of that of Lambert in which a mild belladonna-hyoscine poisoning covers a progressive diminution of the habit-forming drug. This is a rapid method in which free purgation is continued without intermission for three days. The mixture, containing equal parts of the tincture of belladonna and the fluid extracts of hyoscyamus and xanthoxylin, is administered in increasing doses.

The author's treatment consists in a gradual and cautious withdrawal of the

habit-forming drug, covered by two successive waves of overdosage of the mixture above referred to and of luminal (phenobarbital) respectively, spread over a period of from ten to fourteen days. The reduction of morphine is arranged simultaneously and is timed to be completed when the maximum of luminal is nearly reached. Delirium is not produced; a slight and transient confusion only being aimed at. When the total dose of morphine has been reduced to $\frac{1}{2}$ grain in 24 hours without discomfort to the patient for two days, saline solution is given in place of the drug. By this time the patient should have passed through slight belladonna-hyoscine confusion into luminal somnolence. At no stage should distress be felt, and there is nothing in the nature of a crisis until the patient becomes morphine free; insomnia is rarely troublesome. The treatment is discontinued at night; during the day a special nurse should always be within call.

Of 7 cases cited by the author, one patient has died morphine-free; one cannot be traced; but the rest are known not to have relapsed.

One of the recovered patients, a woman of 53, who had been treated ineffectively by three experts, appeared to be a quite hopeless case. She was acutely hysterical and complained of agonizing deprivation pains. Three special nurses were needed but withdrawal was accomplished in four weeks.

The author mentions that it is an essential, in connection with the withdrawal, that the patient, in the after treatment, should be built up both physically and mentally.

WHOOPING COUGH

In the *M. J. Australia*, Dec. 25, 1926, Dr. Frank Trinca states that the treatment of even very severe cases of whooping cough by nonspecific serum, given by mouth, has been quite successful. The serum is administered in 15 cc. doses every 4 hours. It is not often necessary to give more than 3 bottles of 100 cc. each.

The simultaneous application of an exciting ointment (Camphor, 1.3 Gm.; Ol. Turpentine, 1.2 cc.; Capsicum Oint., 28 Gm.) to the skin of the thorax, twice daily, promotes mucous secretion which is a vehicle for carrying phagocytes and immune bodies into the infected area.

Sugar and starches in the diet should be reduced.

CHRONIC ARTHRITIS OF KNEE

When the knee alone is affected and the patient cannot remain in bed, W. G. Macdonald, in the *Practitioner*, for February, 1927, describes an ambulatory method of treatment. The patient is kept in bed for a few days and gentle continuous traction applied. The whole leg is then put in plaster from just below the fold of the but-

tock to three or four inches above the ankle. Plenty of padding is used about the knee and at the upper and lower limits of the plaster. The knee is kept as much extended as possible during the dressing. When the plaster is fully dried the patient can move about. The knee is kept at rest, a great proportion of the body weight being transmitted from the thigh to the leg via the plaster. The plaster is left undisturbed for about 3 weeks and during this time the patient can get about. If the flexion is severe the process may have to be repeated. By this means Macdonald has frequently been able to get semi-flexed knees nearly straight with but very little interference with the patient's normal life.

GASTRECTOMY FOR GASTRIC ULCER

Dr. Johan Nicolaysen, of Oslo, Norway, writing in the *Practitioner*, for Feb., 1927, says that sleeve resection has proved to yield 33 percent of subsequent unsatisfactory results. The results of gastrectomy are so much better than those following gastro-enterostomy that the former operation quite naturally acquires more and more adherents as the normal operation for gastric ulcer.

Finsterer's "exclusion-resection," for duodenal ulcers that cannot be excised, secures the certain exclusion of the ulcer without the comparatively great risk of post-operative jejunal ulcer which v. Eiselsberg's method of exclusion involves.

In the case of ulcers situated high on the lesser curvature, Nicolaysen thinks that Balfour's cautery excision vindicates its claim.

In regard to the technic of gastrectomy, the choice from the very beginning will be between Billroth's first method and the Kroenlein-Reichel-Polya method with the modifications introduced by Balfour and quite recently by Moynihan. On perusal of the literature it appears that Billroth's first method gives a greater mortality and involves many drawbacks such as suture-insufficiency, recurrent ulcers, and secondary stricture at the point of resection.

Nicolaysen has found it most expedient to operate according to Moynihan's directions: anastomosis between the stomach and the jejunum after the "anterior no loop" method.

STITCH ABSCESESSES

To avoid stitch abscess or operative wound infection, Dr. H. Hoyt Cox, of Chicago, in the *Illinois M. J.*, January, 1927, recommends adequate and thorough preparation of the field of operation. It should be scrubbed with soap and water, followed by ether and iodine. The ether dissolves the fat and allows the iodine to penetrate the skin. The iodine is then allowed to dry and the excess is removed with alcohol. Cox finds that if the field is swabbed with

alcohol after the operation, thus removing the iodine, burns will be prevented.

Further rules given by Dr. Cox are: Protect the skin edges with gauze pads; discard the knife after original incision; have the surgical nurse put on all gloves; keep the hands out of the wound as much as possible; see that hemostasis is complete; do not use an excessive amount of catgut.

EXAMINATION OF PRE-SCHOOL-AGE CHILDREN

Children of pre-school age have received less attention in preventive medicine than have other groups of children, according to Dr. J. Turney Taylor, in *Wisconsin M.J.*, Feb., 1927.

At this age there is rapid physical growth, habits are changed, immunity is not developed and illness is a frequent manifestation. From 40 to 45 percent of children of school age are found to possess definite physical defects, some of which may have developed during infancy or later.

Dr. Taylor recommends periodic physical examination of such children for the purpose of detecting incipient physical defects or disease and watching the development of the child.

These examinations should be conducted along the same lines as laid down for adults, and regular periods of examination should be instituted. As well as the physical examination, the child's mental status should also be looked to.

ORAL IMMUNIZATION

Dr. E. Fraenkel in *Med. Klin.*, Feb. 4, 1927, states that 4 human subjects who received the Besredka oral immunization against dysentery were not affected; while 2 control subjects, not immunized, promptly contracted dysentery.

In places where typhus epidemics had been of yearly occurrence they have ceased after subcutaneous inoculation. Oral immunization has resulted in the complete disappearance of typhoid in places where it had been a plague for many years.

The Besredka prophylaxis, continued for three days and preceded by administration of sodium benzoate, was found to protect mice against inoculation of paratyphosus B. For the human subject, the usual dose of the benzoate is 1 Gm.

DIAGNOSIS OF POLIOMYELITIS

Poliomyelitis does not, according to Dr. John J. Moren, in *Kentucky M.J.*, Feb., 1927, occur associated with other diseases; nor is it found, like encephalitis, complicating severe injuries.

In arriving at a diagnosis, symptoms are important. Paralysis usually sets in within

5 days; and digestive, pulmonary and meningeal symptoms are the most common.

Rigidity is important in differential diagnosis: Poliomyelitis with meningeal signs may show rigidity, a doubtful Kernig's sign and positive Babinski sign. In clear meningitis there is rigidity and Kernig's sign but no Babinski sign. In epidemic encephalitis rigidity is not a prominent factor; in the neuritic type of encephalitis there is often a muscular rigidity.

In basal meningitis from other infections the diagnosis demands time for observation. The findings will often lead the physician to suspect other disease than poliomyelitis.

The recognition of poliomyelitis has been rendered more difficult since it is no longer regarded as a purely spinal disease.

INDUCTION OF LABOR

It is sometimes necessary to bring on labor, in cases where nature is dilatory in this respect or when certain accidents happen. Dr. A. Mathieu, in *A. J. Obst. & Gyn.* for February, 1927, outlines a procedure which has been successful in 96.7 percent of the cases in which he has used it. The details follow:

In the hospital, the patient is given two ounces of castor oil and ten grains of quinine sulphate and exactly two hours afterward, a hot soapsuds enema is given and as the enema is about to be expelled, three minimis of pituitary extract are given by hypodermic injection. This same dose of pituitary extract is repeated hypodermically every thirty minutes until labor starts and *no longer*. From then on, the labor is conducted as though the onset had been normal.

Failure is admitted and the procedure stopped if eight hours pass without labor being started or if there is absolutely no sign of any effect toward the induction or if the continual use of the hypodermic is too trying to the mother. In such cases, the procedure is stopped, the mother is given an hypnotic or sedative and after twenty-four or forty-eight hours, the induction is again started.

DIFFERENTIAL LEUKOCYTE COUNTS

The most widely used method for differential leukocyte counts is the spreading of a drop of blood on a glass slide which is examined under the microscope. But, according to Dr. Daniel Nicholson, in *J. Lab. & Clin. Med.*, March, 1927, the leukocytes are not evenly distributed on a glass smear slide and it is impossible to do an accurate differential count of them by this method.

Leukocytes are, however, evenly distributed in the counting chamber; and, if 6-percent Giemsa's stain in 20-percent acetone is used as a diluting fluid, the red cells are rendered transparent and the leukocytes well stained, so that a differential count

can be made under the high power lens. Faint traces of acid or alkali interfere with the staining and a fresh mixture of Giemsa's stain and acetone solution must be made daily. Nicholson describes this as a combined diluting and staining fluid for differential leukocyte counts in the counting chamber.

THE BLAIR-BELL (LEAD) TREATMENT OF NEOPLASMS

Dr. William W. Haggart, of Denver, Colorado, has tried the Blair Bell colloidal lead treatment in some cases of inoperable malignant disease. In his article in *Colorado Med.*, March, 1927, he concludes that lead is of no value in itself but that it is a definite aid to x-ray treatment and of greater value in sarcoma than in carcinoma. It is best to remove as much diseased tissue as possible before starting the lead treatment. In inoperable tumors lead should be given, followed by very vigorous x-ray treatment.

Dr. Haggart has been using the lead therapy only 6 months and considerably more work will be necessary before making any definite statements.

The phosphate form of colloidal lead has been used. Usually not more than 400 mgm. has been administered in any given case and up to the present no influence on the kidney function has been observed, nor have any violent reactions appeared.

FUNCTIONAL SPASMS IN CHILDREN

Functional spasms in children are more frequent than spasms due to organic nerve lesions, according to Dr. J. Epstein, of New York, in the *Am. J. M. Sc.* for March, 1927. The striated or external musculature as well as the various internal organs may be affected, giving rise to a multitude of disorders. Emotional spasmophilia may manifest itself in various abnormal actions and reactions.

An early and proper diagnosis should be made of the many obscure ailments in children which have a neuromuscular or a psychic spasmodic diathesis as their basis.

Proper food and healthy surroundings will act as a prophylactic during infancy. Calcium salts, phosphorated cod-liver oil, iron, and whatever symptomatic treatment is indicated, will do much good as a cure and also as a preventive from drifting into the neuroses of later life.

IMMUNE SERUM FOR CHOREA

In 1923 Rosenow, of the Mayo Clinic, isolated certain streptococci from the nasopharynx and tonsils of patients with chorea; he also prepared a monovalent serum that specifically agglutinated these organisms.

Drs. Jesse R. Gerstley and L. H. Wilhelmi have tested serum prepared in a similar way on 27 chorea patients, in the Sarah Morris Hospital for Children, of Chicago, and have published their findings in *A. J. Dis. Chil.*, April, 1927. They find that the monovalent serum in its present form is of no clinical value in the treatment of chorea. It is possible, of course, that the organisms which they obtained were not the true organisms of chorea; however, they are tempted to advance the hypothesis that there are two kinds of chorea—one of definite infectious origin and another due to the overtaxing of a predisposed nervous system through overwork and study.

As regards the organisms isolated, there is great variation in the types of streptococci produced from cultures by ordinary methods in the throats of patients having chorea. A monovalent serum, prepared by the use of the Rosenow chorea streptococcus, is not absolutely specific but does agglutinate other types of streptococci.

Tonsillectomy apparently did not have any influence on the course of the disease or on the development of recurrence in the authors' series of patients; although they are not prepared to state its influence on the development of complications.

SUNLIGHT IN TUBERCULOSIS

That sunlight treatment of tuberculosis is being turned to much too often, especially in the pulmonary forms of the disease, is the opinion expressed by Dr. S. H. Watson, of Tucson, Ariz., in *Ann. Clin. Med.*, April, 1927.

Dr. Watson has had twelve years' personal experience of this method of treatment, and whereas formerly he was giving sun treatment to 50 or 60 percent of his patients, whether the disease was pulmonary or extra-pulmonary, at present he is giving this treatment to not more than 10 percent, only a fraction of which represents pulmonary cases.

In general, direct sunlight is indicated in cases of extra-pulmonary tuberculosis and contraindicated in pulmonary tuberculosis. It is not a cure but only an aid to cure.

Direct sunlight, carelessly administered, can effect much harm. Its employment has to be governed by the individual's reactions.

Sunlight is of value in extra-pulmonary tuberculosis with a coincident pulmonary lesion, and of great value in hilum gland tuberculosis. It is of some value in some cases of the productive type of pure pulmonary tuberculosis; but here it must be employed with the greatest caution lest it transform a favorable, stationary, or healing lesion into a rapidly progressing and fatal one.

Sunlight is always harmful in the exudative type of pulmonary tuberculosis.

New Books

CUSHING: LIFE OF OSLER

THE LIFE OF SIR WILLIAM OSLER. By Harvey Cushing. In Two Volumes. Illustrated. London and New York: Oxford University Press. 1925. Price \$12.50.

Lord Macaulay, in one of his brilliant essays, says that the world gives its praise not to the man who does what no one else can do but to the man who does best what all do well. The commanding position which Osler occupied in the medical world was not due to any outstanding achievement in medical science, nor to exceptional brilliancy as a teacher, but rather because, by his humanity, personality and character, he was the embodiment of the ideal physician—a model for all that strive but which few can hope to measure up to.

Professor Harvey Cushing's "Life of Sir William Osler," in two volumes, is a delightful work—a labor of love, written sympathetically by a pupil who was in close association with his master.

The "Life" is divided into three parts. The first part deals with Osler's life in Canada (1849-1884); the second part covers his life in the United States (1889-1905), first as professor of clinical medicine in the University of Pennsylvania and, later, as physician-in-chief at the Johns Hopkins Hospital, Baltimore; the third part of the work, which comprises the whole of the second volume, deals with Osler's life as regius professor of medicine at the University of Oxford.

To us in America, that part of the "Life" covering Osler's activities in the United States is easily the most interesting. Vivid details are given of Osler's activities and innovations, and of the new spirit which he infused into clinical teaching and laboratory research. It does not seem too much to say that to Osler, more than to any other man, may be traced the fostering of that spirit of clinical observation and research which has culminated in the United States today occupying the foremost place in medical science.

Looking through the book one sees, both at Philadelphia and at Baltimore, Osler's intense interest in and development of bedside clinical teaching, his efforts to realize laboratory diagnosis, his sympathy and fraternal spirit of camaraderie with his students and his rare power of instilling into others his own love of research; while withal, the keynote of his whole work was better service to humanity. All these were indeed innovations in didactic medicine.

The wavelets which originated around Osler undulated in ever-increasing circles until they touched the confines of other medical centers, for Osler was an enthus-

iaст who did not let his light shine under a bushel; he preached his doctrine boldly, not to seek fame or reward but always to advance medical knowledge and medical practice. Either by himself, by those who came under his influence, or by the medical press, every teaching medical center in America was influenced by Osler's work and ideals. It is no mere coincidence that the period of America's greatest advance in medical science—a period also that witnessed the orientation of medical practice toward humanitarianism—corresponded with that during which William Osler occupied his chairs at Philadelphia and at Baltimore.

Looking forth over the land today, with its manifold centers of research activity, its great development of clinical teaching, and the lofty idealism of the profession as a whole, we see the consummation of Osler's ideals. This is why "The Life of Sir William Osler" should have a marked appeal to every American physician.

But there is more. In looking over the "Life" one cannot but feel that the deep human sympathy of Osler, (leavened by the human charity, unity, peace and concord to which his philosophy of medicine was always united) must of necessity have left an indelible mark on professional ethics and ideals in America; this was the very antithesis of the cold scientific and materialistic philosophy that pervaded German thought and to which America was gradually succumbing.

Throughout the "Life" one constantly encounters Osler as a bibliophile. But his love of rare and fine medical classics was not for the books themselves, as rarities, but rather for the noble thoughts enshrined within them. To him it was a delight and a solace, a profit and a pleasure to converse again with those old medical worthies whose ideals were the prototypes of his own.

Professor Harvey Cushing's "Life of Sir William Osler" is a mirror picture of all that an ideal physician and an ideal man should be. In this age when, for many reasons, commercialism threatens the noble profession, the life and ideals of Osler should be a guiding star for every true physician. American medical science is richer because Osler lived and worked among us, and American physicians owe him a great debt because by his own example, both as a physician and a man, he pointed to the highest things and led the way.

W. A. B.

A book is a living thing for which its author is responsible. A book in a library or on a table, even if it is not read, is a potent force for good or evil.
—Bishop G. S. Arundale.

SOLLMANN: PHARMACOLOGY

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and *Materia Medica* in the School of Medicine of Western Reserve University, Cleveland. Third Edition, Entirely Reset. Philadelphia and London: W. B. Saunders Company. 1926. Price \$7.50.

Dr. Torald Sollmann is well known by his many original and valuable experimental investigations regarding the biologic action of drugs. His "Manual of Pharmacology," the first edition of which appeared in 1917, has become established as a standard textbook on the subject. A second edition appeared in 1922; and because pharmacologic investigation has continued or rather accelerated its pace with the introduction of many essentially new drugs and new conceptions regarding drug action and chemotherapy, a third edition of the book has become necessary.

In the present (third) edition the greater part of the work has necessarily been rewritten and represents the results of the author's own investigations as well as those of other workers. Some idea as to the magnitude of the work involved in adding and revising may be gained from the fact that some twelve hundred new titles have been added to the bibliography at the end of the book.

This volume is arranged to serve not only as a manual or textbook for the student and practitioner but, owing to the very extensive use of footnotes and the bibliographical references, it also becomes a work of reference by which a more detailed study of any desired subject matter may be pursued.

The book has been revised to conform in nomenclature, spelling, etc., with the last (Tenth) Revision of the United States Pharmacopoeia.

Dr. Sollmann's Pharmacology needs no commendation. The author's standing and reputation is a sufficient guarantee that his book is all that the strictest requirements of a pharmacologic manual should be.

The work appears at a time when chemotherapy and the physiologic action of drugs are receiving a very large share of the attention of medical practitioners and should become a part of every well-rounded medical library.

W. A. B.

ERB: CHEMICAL TESTS

CHEMICAL TESTS. A manual for Chemists and Physicians. By Russell C. Erb, B.S., M.S., Associate Professor of Chemistry at the Philadelphia College of Osteopathy. Easton, Pa.: The Chemical Publishing Co. 1927. Price \$3.00.

As the title indicates, the book is intended for reference use by chemists and physicians in selecting a suitable qualitative test

for substances which are ordinarily encountered. As such, it should prove a useful addition to the book shelf in the physician's laboratory. A number of tables given in the back of the book will be found helpful.

E. H. V.

SHASTID: HISTORY OF OPHTHALMOLOGY

AN OUTLINE HISTORY OF OPHTHALMOLOGY. By Thomas Hall Shastid, A.M., M.D., F.A.C.S., Sc.D., LL.B., etc., Tenth Avenue Medical Bldg., Duluth, Minnesota. An attempt to state the History of Ophthalmology in forty-five minutes. Published by the American Optical Company, Southbridge, Massachusetts. 1927. Selling Agent, Geo Wahr, Ann Arbor, Michigan. Price \$1.25.

The development of ophthalmology, from 2250 B. C. to the present time, is briefly reviewed, chiefly under the names of the men who made outstanding contributions

A valuable little book for ophthalmologists and those who are interested in the history of medicine.

SHASTID: EYES

OUR OWN AND OUR COUSINS' EYES. By Thomas Hall Shastid, A.M., M.D., F.A.C.S., LL.D., Tenth Avenue Medical Building, Duluth, Minn. An attempt to exhibit the evolution of the eye, so far as possible in language free from technicalities. Southbridge, Mass.: American Optical Company. 1926. Price \$1.00.

This monograph is a reprint of a lecture delivered at the Mayo Clinic. It treats of the construction and peculiarities of the eyes—commencing with the protozoa—in insects, fishes, birds, mammals and man, all of which the author thinks, have a cousinly relation.

The book contains many very interesting facts concerning the development of the eyes, especially valuable to oculists and optometrists.

W. A. B.

BISHOP AND NEILSON: HISTORY OF CARDIOLOGY

HISTORY OF CARDIOLOGY. By Louis Fau-
geres Bishop, M.A., M.D., Sc.D., F.A.C.P.,
President, Medical Association of Greater
City of New York; Late Chairman, Section
on Historical and Cultural Medicine, New
York Academy of Medicine; etc., and John
Neilson, Jr., B.S., M.D., Assistant in the
Cardiac Clinic, St. Luke's Hospital, New
York. With an introduction by Victor
Robinson, Ph.C., M.D. Limited Autographed
Edition. New York, 12 Mt. Morris Park
West: Medical Life Press. 1927. Price
\$5.00.

Cardiology is of interest to the general practitioner as well as to the heart specialist because heart disease is still one of the chief factors in mortality statistics.

This little volume of 70 pages gives a concise outline of the progress of knowledge, regarding the physiology and pathology of the heart, from the time of the ancient Greeks down to the present. A chronological arrangement is adopted and portraits of the great cardiologists are included.

Study of the book shows that those who throughout the ages contributed to cardiology were men of great common sense and honesty of purpose who had a keen appreciation of the needs of the peoples of their times.

W. A. B.

VERSE—AND SOME POETRY

A BOOKFELLOW ANTHOLOGY, 1927. By 111 Bookfellows. Chicago, 1217 East 53rd Street: The Bookfellows. 1927. Price \$2.00.

The Bookfellows have published another cooperative anthology of contemporary American verse, and again, while not a galaxy of world-shaking masterpieces, most of the things are good, sound versification (these folks are bookish people, remember, and know something about the business of writing), and there is enough real poetry in it to leaven a lump larger than this.

George Steele Seymour's "City Streets" is a sequence which makes one think and feel, "Dark Days," by Margaret E. Bruner; "The Growth of God," by Jasper Barnett Codwin; "Thoughts on Armistice Day," by William Closson Emory; "Last Things," by Hoyt Hudson; and a number of others are worth reading (and will be read) several times. Few of the things are really painful.

As a study of verse writers in the making this volume is a valuable text book and will bear close study.

The Bookfellows always make books that are, mechanically, a pleasure. They use good paper and good sense in choosing their type-faces, decorations and bindings. Real booklovers will enjoy the craftsmanship of the volume.

No real verse reader can fail to get his money's worth out of this anthology, and as only 800 copies were printed (few of which are for sale), those who want one will do well to speak quickly.

DORLAND: MEDICAL DICTIONARY

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. A New and Complete Dictionary of the Terms Used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc., With the Pronunciation, Derivation, and Definition, Including Collateral Information of an Encyclopedic Character. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Lieut.-Colonel, M.R.C., U. S. Army, Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; etc. Fourteenth Edition, Revised and Enlarged.

With the Collaboration of E. C. L. Miller, M.D., Professor of Bacteriology and Biochemistry, Medical College of Virginia. Philadelphia and London: W. B. Saunders Company. 1927. Price, plain \$7.00; thumb index, \$7.50.

This fourteenth edition of the American Illustrated Medical Dictionary contains more than 2,000 new words, keeping pace with the latest terms employed in medical and allied literature—words whose meaning the practitioner will particularly want to know when he meets them in current journals.

A number of new illustrations, especially exemplifying new terms, have also been added.

A good dictionary is a prime necessity for the doctor who writes, and the new edition of the American Illustrated Medical Dictionary meets the most exacting requirements.

W. A. B.

WILSON: SIR WILLIAM MACKENZIE

THE BELOVED PHYSICIAN, SIR JAMES MACKENZIE. Biography by R. Macnair Wilson. With a Photogravure. New York: The Macmillan Company. 1926. Price \$4.00.

In this biography, Macnair Wilson successfully endeavors to make us know that really great physician Sir William Mackenzie, "a man 'who was' not as other men. He loved the profession to which he belonged with a deep and passionate love; was jealous of its honor; raised his voice to warn it of its danger." As a result Mackenzie made enemies before he made friends and later, even when he had many devoted admirers, his own advanced knowledge of the cardiac mechanism and his open criticism of other eminent practitioners' ignorance along this—and other—lines, assured him plenty of opponents.

Mackenzie had a decisive way of assuring patients with "missing beats" that there was "nothing really wrong" with them and this sort of thing did not suit Harley Street. However, because he knew what he was talking about, he was able, by such positive statements, to rescue hundreds of men and women and children from despair and his office was a place to which those with a doubtful heart went in fear and left with confidence. Naturally, though somewhat brusque in manner, he became "the beloved physician." Before too many years passed, moreover, wise practitioners sat at his feet to learn truths which, slowly developed then, we accept as basal today.

What Pasteur did for Bacteriology, MacKenzie did for Cardiology—he erected a permanent structure where there had been nothing but conjecture and erroneous conclusions. Those who know little of this man's stupendous work should read Macnair's biographical sketch, and the physician familiar with his strictly professional attainments will appreciate them more fully.

after learning something about the intimate life of this determined Scot who, once deemed an academic failure and dubbed a "dunce," became, first, an almost over-worked physician, and finally "through no fault of my own" as he quizzically remarked, a most eminent specialist.

The writer is not as a rule an enthusiastic admirer of biographies—or autobiographies for that matter—but he has read this description of Mackenzie and his work with real pleasure and decided profit.

G. H. C.

PRINZ: DENTAL MATERIA MEDICA

DENTAL MATERIA MEDICA AND THERAPEUTICS. With Special Reference to the Rational Application of Remedial Measures to Dental Diseases. A Textbook for Students and Practitioners. By Hermann Prinz, A.M., D.D.S., M.D., Sc.D., Professor of *Materia Medica and Therapeutics*, The Thomas W. Evans Museum and Dental Institute School of Dentistry University of Pennsylvania; etc. Sixth Edition. Enlarged and Revised According to the United States Pharmacopeia, Tenth Decennial Revision. St. Louis: The C. V. Mosby Company. 1926. Price \$6.00.

The present, sixth, edition of Prinz' *Dental Materia Medica and Therapeutics* has been enlarged and revised in accordance with the numerous changes in the last revised issue of the United States Pharmacopeia. Descriptions of such new drugs as are of importance to the dentist are also added.

The work remains, as formerly, a standard textbook for dental students and practitioners.

W. A. B.

HODSON: NATURE SPIRITS

THE KINGDOM OF FAERIE. By Geoffrey Hodson. London: The Theosophical Publishing House, Ltd. (The Theosophical Press, 826 Oakdale Ave., Chicago). 1927. Price \$1.25.

If we see two bricks fastened together with mortar we know that a workman has had something to do with it; but we look at the bricks (cells) in the skin of an onion, fastened together with cement substance, and never give a thought to the possibility that some invisible workman may have put them together.

In these days when we are surrounded with evidences of the reality of potent forces which we cannot see, it behooves us to listen to the statements of a man who says he can see things which are invisible to most of us, before we begin to laugh at him.

Every nation and people has had its traditions of ethereal beings, invisible to most people but readily observed by some. The descriptions and pictures of these creatures are wonderfully consistent. They are known by the generic name of fairies. The Christian Scriptures allude frequently to some

varieties as angels and cherubim and seraphim.

This little book contains detailed descriptions of ethereal beings seen by the author at various times and in various places. If the author is hallucinating, his stories are very circumstantial—and just what do we know about the nature of hallucinations, anyway? Perhaps the man we call crazy is really able to see things which our visual organs do not record.

As a simple recital of personal experiences in a rather unusual field, this volume should interest anyone who has a taste for wandering off the beaten track, in his reading and thinking.

INTERNATIONAL CLINICS,
MARCH, 1927

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Volume I, Thirty-Seventh Series, 1927. Philadelphia and London: J. B. Lippincott Company. Price \$3.00 per volume; \$12.00 per year.

The first quarterly volume of International Clinics for 1927 opens with an article by Professor L. F. Barker, discussing diabetes mellitus in the light of the newer insulin and other treatments.

Ten articles deal with diagnosis and medical treatment. Among these the article on the diathermy treatment of gonorrhœa, by Professor Van Leeuwen, of Utrecht, Holland; that on paresis by Professor Bumke, of Munich; and an article on arteritis by Professor Harbitz, of Oslo, Norway, should be specially mentioned.

Among the five articles comprising the surgical section, that by Dr. W. W. Babcock, of Philadelphia, on biliary surgery, appears to be of special practical interest and is well illustrated.

An excellent resume of medical progress during 1926 is contributed by Drs. H. W. Cattell and J. F. Coupal.

W. A. B.

BALLENGER: DISEASES OF THE NOSE, THROAT AND EAR

DISEASES OF THE NOSE, THROAT AND EAR; MEDICAL AND SURGICAL. By William Lincoln Ballenger, M.D., Late Professor of Otolaryngology, Rhinology and Laryngology, College of Physicians and Surgeons, Department of Medicine, University of Illinois, Chicago, etc. Revised by Howard Charles Ballenger, M.D., Fellow of the Chicago Otolaryngological Society; etc. Fifth Edition. Illustrated With 551 Engravings and 32 Plates. Philadelphia and New York: Lea & Febiger. 1925. Price \$10.00.

Ballenger's textbook on diseases of the nose, throat and ear, has from its first appearance occupied a leading place in the United States as a reliable and complete

work of reference for the general practitioner as well as for the specialist.

The thoroughness with which the original work was written called but for little in the way of revision in the later editions; and in the present—the fifth—edition the principal additions are such new anatomic and pathologic findings as the course of time naturally brings forth. The chapters on hay-fever, hyperesthetic rhinitis and asthma have been rewritten to conform with the newer knowledge concerning the etiology and treatment of these diseases. Gradenigo's syndrome, Wittmaack's theory of nonpneumatization and other new topics are also discussed. The surgical procedures have called for but little revision, but what has been necessary has been thoroughly done.

Nearly half of the book is devoted to diseases of the ear, and this, as in previous editions and as might be expected, is the most important section of the book, especially from the practical standpoint. We might single out the treatment of mastoiditis as being particularly well described.

If we might venture a criticism it would be that perhaps the theories in regard to nystagmus and the labyrinthine functions in general are perhaps a little too dogmatic seeing how controversial are our present views.

W. A. B.

HARROWER: ENDOCRINES IN GYNECOLOGY

THE ENDOCRINES IN GYNECOLOGY. By Henry R. Harrower, M.D., Glendale, Calif.: The Harrower Laboratory, Inc. 1927. Sent gratis.

A pocket-size companion volume to "An Index of Organotherapy," "A Manual of Pluriglandular Therapy" and "The Endocrines and Blood Pressure."

An interestingly written, brief and clinically sound presentation of the part played by the endocrine organs in the diseases of women. Every open-minded physician can learn something by reading it.

FITCH: MINERAL WATERS OF THE UNITED STATES

MINERAL WATERS OF THE UNITED STATES AND AMERICAN SPAS. By William Edward Fitch, M.D., Member of the International Society of Medical Hydrology, etc. Illustrated. Philadelphia and New York: Lea & Febiger. 1927. Price \$8.50.

Occasionally the reviewer has the pleasure of welcoming to his table a work which is distinctly different from the common run of "just books." Such a work is Fitch's volume of 800 pages dealing with the mineral waters of the United States, a subject which has the rare quality of being un-hackneyed and which has been very adequately covered by the present book.

The object of the work, as the author states in the preface, is: "To awaken the

medical profession to a reality of the importance of our American mineral-water resources, their great therapeutic value in the treatment of chronic diseases and to encourage a more thorough understanding of the subject of medical hydrology," a subject which has been rather neglected in medical education in the United States.

Considering the vast mineral-water resources of the United States and the small amount of attention paid to them by the medical profession, it can scarcely be denied that the objects of the book are worthy and called for. The author therefore deserves the greatest commendation for his painstaking labor; the book appears to us to fulfil its purpose very admirably, it should arouse interest in a subject which has been too much neglected, and in a form of therapy which for centuries has been found efficient in Europe by both physicians and their patients.

The work consists of four parts:

Part I deals generally with the nature and origin of mineral springs. This part contains a chapter contributed by Dr. Ernest E. Smith, President of the Academy of Science of New York City, on the classification of mineral springs. Dr. Smith gives a more or less critical classification of American mineral-waters from the medicinal value standpoint, as opposed to the older strictly chemical classification. Not only are the waters classified as alkaline, saline, ferruginous, lithic, etc., but there is a schematic system which standardizes the use of the terms; very weak, weak, medium, strong, etc., so that a practitioner will have definite relative meanings conveyed in selecting a water for a given condition. This we consider one of the most valuable parts of the book, and an addition to hydrotherapeutic literature.

There is also a good chapter by the author which deals with the dosage of mineral waters based on the degree of concentration of their chemical constituents. Dr. E. H. S. Bailey contributes chapters on the commoner and rarer solid ingredients and gaseous contents of mineral waters; and Dr. John C. Hemmeter writes a chapter on radioactivity and radium emanation in the treatment of disease, with special reference to radio-active mineral waters.

Part II deals with the therapeutic applications of mineral waters; and in Part III—Balneotherapy—Dr. Guy Hinsdale writes chapters on the rationale and technic of hydrotherapy.

Part IV takes up three-fourths of the entire book and gives a geographical and technical description of the mineral springs occurring throughout the United States. There are 425 active spring areas and analysis of the waters of 871 springs are given. All the well-known spas, to the number of more than 100, are described with greater detail.

Dr. Fitch's book makes it quite plain that there is no need to go to Europe for spa treatment. The facilities of the United

States are fully equal if not superior to those of Europe; and besides, at least at the large spas, the home equipment and the facilities as well as the hotel accommodations are superior to those of Europe.

W. A. B.

LENTZ: DRILL MANUAL

THE CADENCE SYSTEM OF CLOSE ORDER DRILL. (*Revised in accordance with latest Training Regulations and Amendments Thereto*) By Major Bernard Lentz, Infantry. Third Edition. Menasha, Wisconsin: The Collegiate Press, George Banta Publishing Company. 1925. Price \$0.75.

The military training camps should be of interest to all physicians, either because they are going to camp themselves, as Medical Reserve Officers, or because their boys will be in the R. O. T. C. or C. M. T. C. Camps.

Close-order drill is the foundation of military training, but until Major Lentz came on the scene with his Cadence System, it was a rather dull and tiresome process. The reviewer has recently attended a camp where 350 Medical Reserve Officers were drilled by the Major, in person, and can testify to the almost unbelievable results attained by this method.

This little manual gives in detail every movement made in ordering or executing all of the evolutions involved in Infantry foot drill, with illustrations and diagrams which make all movements perfectly clear.

Every Reserve Officer should own a copy.

TRANSACTIONS OF COLLEGE OF PHYSICIANS

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. Third Series. Volume Forty-eight. Philadelphia: Printed for the College. 1926.

This is the annual volume containing the papers read before the College of Physicians of Philadelphia during the year 1926.

Reading the papers presented in a symposium on focal infections, it is gathered that physicians are inclined to a more conservative view in regard to the importance and radical treatment of such infective foci.

W. A. B.

PORTRER: HYGIENE

ELEMENTS OF HYGIENE AND PUBLIC HEALTH. An Introduction to Preventive Medicine for Students and Practitioners of Medicine. By Charles Porter, M.D., B.Sc., M.R.C.P. (Edin.), of the Middle Temple, Barrister-at-Law, Medical Officer of Health, Metropolitan Borough of St. Marylebone; Lecturer in Public Health, Middlesex Hospital, Medical School; etc. With 98 Illustrations. Second Edition.

London, New York, etc.: Humphrey Milford, Oxford University Press, 1926. Price \$4.50.

The author, who is an experienced public health officer and also a lawyer, has written this book especially for the use of general practitioners because he is rightly impressed with the importance of curative medicine in furthering the objects of preventive medicine and the preservation of health.

The general parts of the book contain the main elementary facts concerning public hygiene and these will be of interest and value to the American general practitioner; but the sections on public health administration and sanitary law, being based on British practice, would not be applicable here.

This is the second edition and the viewpoint of preventive medicine has been stressed.

W. A. B.

HIRAN: COMPEND OF MEDICINE

MEDICAL CATECHISM FOR STUDENTS. By Kishinchand. M. Hiranandani, C.M.S. (Hyd-Sind), L.C.P.S. (Bombay), etc., Co-Author of *Epidemic of Influenza 1918*; Assistant to the Surgical Specialist Indian Station Hospital Quetta (1917-1918); etc. First Edition. Published by Kishinchand. M. Hiranandani Hyderabad Sindhi, K. J. Road, West Kachha, India. 1921. Price Rupees 1-8-0. (About 55c.)

A small compend, prepared in question and answer form, for medical students preparing for examinations, with a list of questions asked at several official tests.

Printed on newspaper stock with paper cover.

Probably valuable to Indian students but better compends are available in this Country.

SAUNDERS BOOKS

SAUNDERS BOOK: A New Illustrated Catalog of More Than 250 Titles. Philadelphia (West Washington Square) & London (9 Henrietta Street, Covent Garden): W. B. Saunders Company. Revised to February, 1927. Sent on request.

GORDON: FRENCH-ENGLISH DICTIONARY

FRENCH-ENGLISH MEDICAL DICTIONARY. By Alfred Gordon, A.M., M.D. (Paris). Late Associate in Nervous and Mental Diseases, Jefferson Medical College; Late Examiner of the Insane, Philadelphia General Hospital; Corresponding Member of the Société Médico-Psychologique de Paris; etc. Philadelphia, 1012 Walnut Street: P. Blakiston's Son & Co. 1921. Price \$3.50.

This dictionary is intended for the use of those who wish to follow progress in

French medicine closely, in the original writings.

The usual English equivalents to French medical terms are given and also a guide to the French pronunciation.

While the book is far from fulfilling the ideal of a really satisfactory French-English medical dictionary (which is a desideratum) yet it will be a great help for the purpose intended.

W. A. B.

HURST: HOSPITAL HOUSEKEEPING AND SANITATION

HOSPITAL HOUSEKEEPING AND SANITATION. By Nora P. Hurst, R.N., St. Louis: The C. V. Mosby Company. 1925. Price \$1.25.

This is a practical little manual, written in simple language by an experienced nurse, in which the details of hospital housekeeping and sanitation, gleaned from many sources, have been gathered together and arranged in suitable sections. The book is intended for the use of nurses and instructors in hospital training schools, but it should also be of practical value to all connected with hospital management.

W. A. B.

KARSNER: HUMAN PATHOLOGY

HUMAN PATHOLOGY. A Textbook. By Howard T. Karsner, M.D., Professor of Pathology, School of Medicine, Western Reserve University, Cleveland, Ohio. With an Introduction by Simon Flexner, M.D. 20 Illustrations in Color and 433, Black and White. Philadelphia & London: J. B. Lippincott Company. 1926. Price \$10.00.

Dr. Karsner states that the purpose of his book is to present the morphological alterations incident to disease in the light of modern views as to their functional significance. The work is designed for students and practitioners. A working knowledge of normal anatomy and physiology as well as bacteriology is presumed, as such is requisite to comprehend pathology.

Dr. Karsner's treatment of pathology is based broadly, as it should be, on pathologic anatomy and histology; and the relation of clinical symptoms and their association with the progressive morbid changes are constantly kept before the reader.

The subject of pathology in its broad aspect is not approached in this work from Virchow's viewpoint of the pathology of the cell; Dr. Karsner considers all of the known and observed exogenous and endogenous agencies which affect the tissues and organs, and their actions and reactions, which result in abnormal or pathologic states and changed functional activity.

The book is divided into two main parts, the first dealing with general and the second with systemic pathology, arranged under the usual systemic classification. This is the logical arrangement, allowing the

student to proceed from general principles to their manifestations in particular organs. There is an abundance of well-selected illustrations, many of the histological pictures especially being in color.

Well chosen references at the end of each chapter enable those who so desire to pursue a more detailed study of the subject dealt with. Most of these references are to easily accessible American literature.

Altogether Dr. Karsner's book may be regarded as a high-class exposition of pathology as taught at present in American medical schools, and it should take a leading place, both as a textbook for students and a reference book for practitioners.

W. A. B.

QUININE

CHININUM. Scriptiones Collectae, Anno MCMXXIV Editae. Published by the Bureau for Increasing the Use of Quinine. Amsterdam, 48 De Wittenkade: Bureau tot Bevordering van het Kinine-gebruik. 1925. Sent free of charge.

This is an instructive and fascinating book dealing with the history and uses of quinine, from earliest times to this date. The contributors are among the most notable men of science and of medicine who have contributed to our knowledge of this indispensable drug—Grassi, Laveran, Ross, Lane, Marañon, Katsume and many others.

The history of quinine is bound up with that of malaria, so this volume is also a modern compendium of "swamp fever." It contains, in addition, valuable chapters on the use of quinine in pneumonia, diseases of the heart and bloodvessels, surgery, obstetrics, dermatology and various other branches of medical practice.

The type and paper are excellent and the illustrations, of which there are many, are chiefly beautiful photogravures.

The book should deeply interest all who are giving their attention to pharmacy or to the history of medicine and contains a wealth of material which will be immediately and practically serviceable to all internists and general practitioners.

REHBERGER: MEDICAL FORMULARY

LIPPINCOTT'S POCKET FORMULARY. By George E. Rehberger, M.D., Author of Lippincott's Quick Reference Book. Philadelphia and London: J. B. Lippincott Company. 1927. Price \$3.50.

A memory refresher for the busy doctor. The first section gives therapeutic suggestions for various diseases and symptoms, which are arranged in alphabetical order. Drug names and composition conform to U.S.P.X. and the new National Formulary.

Section II lists drugs and preparations in the U.S.P.X., National Formulary and New and Non-official Remedies, with properties, dosage and uses.

Section III contains miscellaneous information—tables, weights and measures, incompatibilities, etc.

A slight book, of convenient size (4x8 inches), bound in red fabricoid and legibly printed on thin but opaque paper.

It should prove serviceable to physicians of all classes, especially to general practitioners.

PORTMANN: EAR, NOSE AND THROAT

EAR, NOSE AND THROAT TREATMENT IN GENERAL PRACTICE. By Georges Portmann, M.D. Translated and Edited by R. Scott Stevenson, M.D. St. Louis: C. V. Mosby Co., 1926. Price \$3.00.

Dr. Georges Portmann, of the University of Bordeaux, is well known for his original investigations in otology and allied fields.

The present small book is only a clinical outline for the use of general practitioners, covering the appropriate treatment of everyday conditions and only indicating when major surgery is necessary.

The volume contains a wealth of prescriptions; and in the translation, Dr. Stevenson has converted the French weights and terms into the English equivalents.

W. A. B.

MEDICAL EDUCATION

METHODS AND PROBLEMS OF MEDICAL EDUCATION. (Seventh Series.) *The School of Medicine and Dentistry of The University of Rochester at Rochester, New York.* New York, 61 Broadway: The Rockefeller Foundation, Division of Medical Education. 1927. Sent gratis on request.

A well-gotten-up and well-illustrated report on the methods of teaching used in the Medical Department of the University of Rochester, Rochester, N. Y.

Of decided interest and value to all who are concerned with medical education from any standpoint.

BANKS AND BOWEN: DEVOTION FOR HEALING

THE GREAT PHYSICIAN. A Manual of Devotion for Those Who Care for the Sick. Selected and Arranged by A. J. Gaynor Banks, M.A., D.S.T., Mission Preacher to Washington Cathedral, and W. Sinclair Bowen, M.D., F.A.C.S. New York: The Macmillan Company. 1927. Price \$2.00.

All physicians recognize the part played by the emotional, mental and spiritual condition of a patient in promoting or retarding the cure of his disease.

Many of us have seen moments when we earnestly longed to be able to say a prayer

or some inspiring word which would give help and comfort to the sick or bereaved. Also, many of our patients would gain inner strength, from a cheerful and uplifting devotional book.

In this little volume the compilers have brought together a collection of suggestions, prayers, psalms and poems for the use of doctors, ministers and patients in helping sick people. It is a good collection—cheerfully devotional and reassuring.

Any physician who is at all religiously inclined can profit by studying this book and using its suggestions.

INTERNATIONAL MEDICAL ANNUAL

THE INTERNATIONAL MEDICAL ANNUAL. A Year Book of Treatment and Practitioner's Index. Forty-Fifth Year. 1927. New York: William Wood and Co. Price \$6.00.

This British publication gives an excellent epitome of the year's literature in medicine and surgery.

The contributors include some of the foremost members of the medical profession and the selecting, editing and illustrating of the various sections are well done, although the type selected is rather small for comfortable reading. There is a wealth of information in these concise annual volumes.

W. A. B.

PRACTICAL LECTURES

PRACTICAL LECTURES ON THE SPECIALTIES OF MEDICINE AND SURGERY. Delivered under the Auspices of The Medical Society of the County of Kings, Brooklyn, New York. (Second Series, 1924-1926.) With One Hundred and Ten Illustrations. New York: Paul B. Hoeber, Inc. 1927. Price \$7.00.

This is the second volume of the "Practical Lectures" published under the auspices of the Medical Society of the County of Kings, Brooklyn, New York, one of the oldest (and perhaps numerically the largest) medical societies in the country.

The lectures are the outcome of the wish of the Society to give their members an opportunity to hear men of recognized ability and teaching experience expound their views on subjects on which they were conceded to be authorities, particularly subjects of a practical nature which would be of value to general practitioners.

The present volume contains thirty-seven such lectures and includes contributions by W. S. Bainbridge, George W. Crile, James T. Case, J. O. Polak and many others in the front rank of medical science.

W. A. B.

Medical News



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A FLYING AMBULANCE IN SWEDEN

Lapland, in northern Sweden, is a bleak and desolate region, well within the arctic circle, but its inhabitants who are seriously ill will now be able to receive hospital care.

In commemoration of his birthday, Oscar H. Hirsch, of Stockholm, presented an aerial ambulance to the Swedish Red Cross. It is shown here discharging, at the military hospital at Boden, a patient from the far-away village of Jockmok.

AN OPENING FOR A LIVE DOCTOR

Due to the untimely death of Dr. R. H. Smith, the fully equipped, 10-bed private hospital which he had established at Eureka, Ill., is for sale.

Eureka is a county seat and has over 1,500 inhabitants. This looks like a good opportunity for some live doctor and those who are interested should write to Mrs. Smith, at Eureka, for particulars.

GOOD OPENING FOR RURAL PRACTICE

The town of Pence, Ind., has 200 inhabitants, waterworks, electric lights, churches and a good grade school—but no doctor. Within 20 miles each way there are four towns, none of which has a doctor.

Pence is 22 miles from Danville, Ill., and 38 miles from Lafayette, Ind., where good hospitals are available, and good graveled roads cover the whole territory.

A keen, active physician who would attend to business ought to have plenty of business to attend to. Any of our readers who are interested can obtain further information by writing to Mr. Frank Patton, Pence, Ind.

CIVIL SERVICE EXAMINATIONS

Applications will be received until Dec. 30, 1927, for appointment as:

Assistant Medical Officer

Associate Medical Officer

Medical Officer

Senior Medical Officer

Applications will be received until Nov. 12, 1927, for appointment as:

Physiotherapy Aide

Physiotherapy Pupil Aide

For further particulars write to the U.S. Civil Service Commission, Washington, D. C.

DR. LEWIS PASSES

Among the various medical periodicals, few have a higher reputation for professional soundness and practical value than has *American Medicine*, and Dr. H. Edwin Lewis, who edited it for 19 years, enjoyed the friendship and esteem, not only of his immediate colleagues but also of hosts of physicians all over the United States. All these will feel a sense of personal loss in the passing of Dr. Lewis, which occurred at his home in Ossining, New York, August 6, 1927, in his fifty-third year.

RELIABILITY OF AIRPLANE ENGINES

Charles L. Lawrence, designer of the engines with which Lindbergh and Chamberlin flew across the Atlantic, states that, in 1926, airplanes equipped with Whirlwind engines flew more than 1,750,000 miles without a single accident and with only three forced landings.

POLIOMYELITIS INCREASING

Reports from various sources indicate that cases of poliomyelitis are increasing somewhat.

All physicians should think of this

disease, at this season, when children are suddenly taken sick, with fever, vomiting, stiffness of the neck and a desire not to be handled. All suspected cases should be isolated until a diagnosis is established, and if positive should be hospitalized.



From the Pathé-De Mille Production

THE COUNTRY DOCTOR

The country doctor of a generation ago is passing, like the cowboy of the nineteenth century frontier, and, like the picturesque plainsman, he is to be immortalized and brought home to the people through the medium of the motion picture.

The picture play, "The Country Doctor" was written by Beulah Marie Dix and is being produced for Pathé by Rupert Julian. It depicts the heroism, devotion and hardships of the New England country doctor in an appealing manner.

A scene from the play, shown above, is an almost exact reproduction, in its general arrangement, of the famous picture "The Doctor," by Sir Luke Fildes, which is to be found in the offices of thousands of physicians all over the country.

NEW MAP OF WASHINGTON, D. C.

An unusually interesting pictorial map, the first of its kind ever published, has just been brought out for free distribution by Maddux, Marshall, Moss and Mallory, Inc., operators of the "4-M" Hotels in the National Capital.

Approximately 100 illustrations of Government and other buildings, museums, art

galleries, statues and monuments, are grouped around a key map, giving a bird's-eye view of the Nation's Capital and enabling ready reference to the exact location of every subject. Quick cross reference from the map to the illustrations is also afforded by means of the key numbers. A brief guide to all places of interest, with directions for reaching each place is likewise provided.

AN ADDITION TO MEDICAL HISTORY

In the early days, the "Illinois Country" included what are now the states of Illinois, Wisconsin, Missouri, Indiana, Kentucky and Iowa, so the "History of Medical Practice in Illinois" which is now being issued should possess a wide interest.

The first volume (which is now ready) begins at the very beginning (1673) and covers events up to 1850—a stirring and romantic period!

Attics, family albums, safe deposit vaults and State records have been searched for the rare maps, pictures and personal materials which make the book so interesting and valuable.

Those who are interested in medical history will do well to write to the Illinois State Medical Society, Medical and Dental Arts Building, Chicago, before the limited edition is exhausted.

STANDARD LABORATORIES, INC., FAILS

A good many physicians who have been so incautious as to become financially interested or entangled with the Standard Laboratories, Inc., of Chicago, will be interested to learn that that company filed a voluntary petition in bankruptcy on or about August 24, 1927, most of the creditors being country doctors.

When (if ever) will the members of the profession acquire the business judgment to look into a glittering proposition, emanating from New York or Chicago, as closely as they would into the standing of some man in their own communities who wanted to borrow money?

When doctors learn that bankers have other functions besides accepting deposits and cashing checks, and use them, less money will be lost in wild-cat schemes.

